

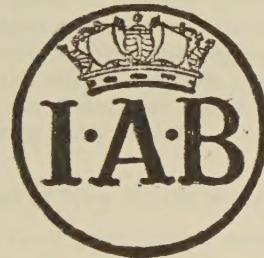
Vol. IV, Part 2.

HELMINTHOLOGICAL ABSTRACTS

incorporating

BIBLIOGRAPHY OF HELMINTHOLOGY

For the Year 1935.



IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY
Winches Farm
Hatfield Road
St. Albans · Eng.

December, 1935

HELMINTHOLOGICAL ABSTRACTS

Digitized by the Internet Archive
in 2024

HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY
FOR THE YEAR 1935

Vol. IV, Part 2.

79—Acta Medica Scandinavica.

a. MAINZER, F.—“Sur la bilharziose pulmonaire, maladie des poumons simulant la tuberculose.” LXXXV (6), 538-562. [1935.]

80—Acta Pathologica et Microbiologica Scandinavica.

a. HOEPPLI, R.—“Action of *Ascaris lumbricoides* substance on the growth of fibroblasts *in vitro*.” XII (3), 281-289. [1935.]

(80a) Heoppli has observed the effect of adding various extracts of *Ascaris lumbricoides* to cultures of chicken fibroblasts. The growth and development of the fibroblasts was adversely influenced by admixture with extracts obtained from muscle, female sexual organs, body fluid, or even from the salt solution in which the worms had been kept for four days. Further experiments excluded the possibility that highly diluted *Ascaris* body fluid might stimulate the growth of the fibroblasts.

R.H.H.

81—Agricultural Gazette of New South Wales.

a. HUNGERFORD, T. G.—“Some internal parasites of the pig.” XLVI (5), 249-251. [1935.]
b. ANON.—“Enema treatment valuable only for pimply gut worm.” XLVI (7), p. 383. [1935.]

82—American Journal of Hygiene.

a. STOLL, N. R.—“Tapeworm studies. I. Restricted pasture sources of *Moniezia* infection in sheep.” XXI (3), 628-646. [1935.]
b. FOSTER, A. O.—“The immunity of dogs to *Ancylostoma caninum*.” XXII (1), 65-105. [1935.]
c. CHANDLER, A. C.—“Studies on the nature of immunity to intestinal helminths. I. The local nature of the immunity of white rats to Nippostrongylus infection.” XXII (1), 157-168. [1935.]
d. KERR, K. B.—“Immunity against a cestode parasite, *Cysticercus pisiformis*.” XXII (1), 169-182. [1935.]
e. CHANDLER, A. C.—“Studies on the nature of immunity to intestinal infections. II. A study of the correlation between degree of resistance of white rats to Nippostrongylus and interval between infections.” XXII (1), 243-256. [1935.]

(82a) In his observations on *Moniezia* infection in sheep on the laboratory farm of the Rockefeller Institute near Princeton, N.J., Stoll found that the parasite was restricted to fields previously contaminated by sheep and that the infection showed no tendency to spread to other areas in close proximity. The author considers that this failure of the parasite to spread

tends to support the view that infection is directly obtained from contaminated-soil or forage and that no intermediate host is involved in the life-cycle. There was a further lack of evidence to support the view that the infection was transferred from the ewe to the unborn or suckling lamb or that ectoparasites were involved.

D.O.M.

(82b) Foster has experimental evidence that seems to show that in dogs there is no age immunity to hookworm disease nor is there any true immunity developed as a result of early infestation. In certain experiments dogs previously exposed to the parasite were more resistant to test infestations than were the unexposed controls. In other experiments the opposite was the case. He suggests that the genetic constitution of the dogs may be a factor which influences the development of immunity. Further it seems obvious that factors which affect the general health and well-being of the host are also those which affect its resistance to invasion with hookworm.

P.A.C.

(82c) Chandler shows that it is impossible to confer passive immunity to rats against infestation with *Nippostrongylus muris* by injection of immune serum. In the case of parabiotic twins the immune twin is unable to immunize the other in spite of a good intermingling of blood. He infers therefore that the immunity is local and a property of the intestinal mucosa, and suggests that it may be nutritional by nature, i.e., be due to the presence of anti-enzymes which counteract the action of the enzymes by which the parasites digest the host protein.

P.A.C.

(82d) Using *Cysticercus pisiformis* in the liver of rabbits, Kerr has been able to establish the fact that the presence of an infestation prevents the development of a later infestation. Immunity was also brought about by intravenous, subcutaneous and intraperitoneal injections of both fresh and dried powdered *Taenia pisiformis*. Finally by injection of immune serum he was able to set up a passive immunity in 50% of his experimental rabbits.

P.A.C.

(82e) Chandler shows that in rats infested with *Nippostrongylus muris* the greatest resistance to further infection occurs 14 to 15 days after the first feeding. After 30 days resistance is slight but although a high percentage of larvae succeed in becoming adults, yet they can persist for only a short time. He suggests that peristalsis may materially affect the primary infection after which anti-enzymes may be developed locally which would affect the second series of invading larvae.

P.A.C.

83—American Journal of Pathology.

- a. CLARK, E. & GRAEF, I.—“Chronic pulmonary arteritis in Schistosomiasis mansoni associated with right ventricular hypertrophy. Report of a case.” xi (4), 693-705. [1935.]

84—American Journal of Tropical Medicine.

- a. CHANDLER, A. C.—“A review of recent work on rate of acquisition and loss of hookworms.” xv (3), 357-370. [1935.]
- b. HINMAN, E. H.—“Studies on the dog heartworm, *Dirofilaria immitis*, with special reference to filarial periodicity.” xv (3), 371-383. [1935.]

(84a) From a review of recent work on the rate of acquisition and loss of hookworms Chandler concludes that (i) if sanitary reforms followed a season unfavourable to hookworm infection they would be followed by a rapid lowering of the level of infection after about six months or earlier; (ii) reinfection would occur rapidly after the treatment of the whole community in the absence of sanitary improvement; (iii) mass treatment would be most effective if given when the soil was practically free from larvae. R.T.L.

(84b) From a study of a large number of dogs infected with *Dirofilaria immitis*, Hinman concludes that normal physiological processes might account for the periodicity of microfilariae in the peripheral blood.

No correlation between the number of microfilariae in the blood and the number of adult worms recovered at autopsy was obtained and in infections consisting of a single female the number of embryos in the blood at 5 p.m. might vary from a few thousand to several million.

Developmental stages of the parasites were not found in the hearts of the dogs autopsied and it is concluded that these must occur in some other part of the body of the host. D.O.M.

85—Anales del Instituto de Biología.

- a. OCHOTERENA, I.—“ Contribucion para el conocimiento de la histopatologia de la cisticercosis cerebral humana en Mexico.” VI (2), 79-88. [1935.]
- b. CABALLERO, E.—“ Nematodos parásitos de los batracios de Mexico. III. Cuarta contribucion al conocimiento de la parasitologia de *Rana montezumae*.” VI (2), 103-117. [1935.]

(85a) In this well illustrated contribution to our knowledge of the histopathology of cerebral cysticercosis in man in Mexico attention is drawn to the similarity of many of the lesions to those of general paralysis. R.T.L.

(85b) From *Rana montezumae* the new nematode genera *Dibulbiger* and *Foleyellides* are described. The former belongs to the subfamily Kathlaniinae and has *D. longispiculis* n. sp. as type and only species. The latter genus, which is near to *Foleyella* has as type and only species *Chandlerella striatus* Ochoterena & Caballero 1932. A description is also given of *Spiroxys corti* n. sp. from the same host. R.T.L.

86—Annales de Médecine et de Pharmacie Coloniales.

- a. GRALL, G.—“ Note sur la microfilariose loa. Ses symptômes et son traitement.” XXXIII (1), 140-144. [1935.]

87—Annales de Parasitologie Humaine et Comparée.

- a. DOLLFUS, R. P.—“ Les distomes des Stylocephalophores terrestres (excl. Succineidae). Catalogue par hôtes et résumé des descriptions.” XIII (2), 176-188; (3), 259-278; (4), 369-385; (5), 445-485. [1935.]
- b. NEVEU-LEMAIRE, M.—“ Un nouvel hôte d'*Oesophagostomum (Conoverberia) bifurcum* (Creplin 1849).” XIII (3), 203-206. [1935.]
- c. MARTÍNEZ-BAEZ, M.—“ Sur la structure histologique des nodules à *Onchocerca volvulus* et à *O. caecutiens*.” XIII (3), 207-230. [1935.]
- d. DOLLFUS, R. P.—“ Rectifications d'orthographe.” XIII (3), p. 279. [1935.]
- e. SKADNIK, J.—“ Sur la synonymie des quelques espèces de la sous-famille des Trichoneminae.” XIII (4), 307-311. [1935.]

- f. CHEN, H. T.—“Un nouveau nématode pulmonaire, *Pulmonema cantonensis* n. g., n. sp. des rats de Canton.” XIII (4), 312-317. [1935.]
- g. CHRISTENSON, R. O.—“Remarques sur les différences qui existent entre les oeufs de *Capillaria aerophila* et de *Trichuris vulpis*, parasites du renard.” XIII (4), 318-321. [1935.]
- h. POPOV, P.—“Sur le développement de *Diplopystidium skrjabini* n. sp.” XIII (4), 322-326. [1935.]
- i. PETRUSCHEVSKY, G. K. & BOLDYR, E. D.—“Propagation du bothrio-céphale (*Diphyllobothrium latum*) et de ses larves plérocercoides dans la région du nord-ouest de l'U.R.S.S.” XIII (4), 327-337. [1935.]
- j. FUHRMANN, O.—“Rectification de nomenclature.” XIII (4), p. 386. [1935.]

(87a) Dollfus reviews the trematodes recorded from terrestrial gastropods, exclusive of the Succineidae, and catalogues them under their respective molluscan hosts. Condensed descriptions of the various larval trematodes are also included.

The catalogue is preceded by an eleven page list which gives molluscan host, bibliographical reference, the larval stage of the trematode mentioned or observed in the mollusc, the geographical distribution and the reference to the chapter section which deals with the parasite. A bibliography of 89 titles is appended.

J.N.O.

(87b) To the list of hosts of *Oesophagostomum (Conoweberia) bifurcum* Neveu-Lemaire adds the mangabey (*Cercocebus* sp.) based on the examination of material collected in Entebbe, Uganda. Illustrations and a table of the principal measurements of the parasite are also included in the paper.

D.O.M.

(87c) The histopathological structure of the nodules of *Onchocerca volvulus* and *O. caecutiens* has been studied in great detail by Martínez-Báez on material from Africa, Guatemala and Mexico. The nodules frequently show fibrinous or purulent fluid in their cavities and apart from differences in detail are essentially similar in both species. Minor differences, such as the abundance of microfilariae in the skin covering the nodules in the case of *O. volvulus* and their rarity in the case of *O. caecutiens*, require further observations before they are fully established.

D.O.M.

(87d) The orthography of the specific names of *Lebouria choerodonis* S. Yamaguti and *Parantorchis chaetodonis* S. Yamaguti published in the *Japanese Journal of Zoology*, Vol. V, No. 3, 1934 and the *Annales de Parasitologie*, Vol. XIII, 1935, is changed to *choerodontis* and *chaetodontis* respectively under Article 19 of the International Rules of Zoological Nomenclature.

D.O.M.

(87e) From his study of the horse parasites of the sub-family Trichoneminae Skadnik concludes that *Trichonema sagittatum* (Kotlán, 1920) is a synonym of *T. coronatum* (Looss, 1902); *T. barbatum* (Smit Notosoediro, 1923) of *T. calicatum* (Looss, 1902) and *T. bidentatum* (Ihle, 1925) of *T. asymmetricum* (Theiler, 1923).

D.O.M.

(87f) A new lungworm, *Pulmonema cantonensis* n. g., n. sp. is described by Chen from the bronchi and bronchioles of *Mus norvegicus* and *Mus rattus* from Canton, China. The new genus is related to *Angiostrongylus* Kamensky, 1905 and to *Bronchostrongylus* Cameron, 1931 but differs in the length of the spicules and in the number and arrangement of the papillae surrounding the mouth. There is no cuticular expansion at the head end and the vulva is situated near the anus.

D.O.M.

(87g) Christenson shows that the eggs of *Capillaria aerophila* have a length of $59\text{ }\mu$ to $73\text{ }\mu$ and that the shells are finely granular while those of *Trichuris vulpis* measure $74\text{ }\mu$ to $90\text{ }\mu$, are more obtusely rounded in shape and have relatively smooth shells. D.O.M.

(87h) Popov obtained a new tapeworm *Diplopylidium skrjabini* after feeding cysticercoids found in the peritoneum of the lizard *Gymnodactylus caspus* to young cats. The new species is related to *D. nölleri* Skrjabin, 1924 and differs chiefly in the size of the scolex and suckers and in the colour of the living specimens. A table gives the principal characters and measurements of the species of *Diplopylidium* from the cat. D.O.M.

(87i) Petrushevsky & Boldyr give tables showing the species of fish which are the chief source of *Bothriocephalus* infections in the north west of the U.S.S.R., together with data on the intensity and habitat of the plerocercoids in each host. Fish from the lakes of Karelia and from the region of Leningrad proved somewhat less heavily infected than those from the Gulf of Finland and almost all the internal organs were found to harbour the parasites, particularly in the case of carnivorous fish. D.O.M.

(87j) Fuhrmann proposes the new name *Joyeuxiella* for the genus *Joyeuxia* Lopez-Neyra, 1927 as the latter name had already been utilized for a sponge by Topsent in 1890. D.O.M.

88—Annales de la Société Belge de Médecine Tropicale.

- a. BÈVE, F. DE—“La bilharziose en Ruanda-Urundi et spécialement à Usumbura.” xv (1), 3-18. [1935.]
- b. D'HOOGHE, M.—“Contribution à l'étude de l'onchocercose humaine dans l'Uélé. Deuxième partie. L'onchocercose cutanée chez l'indigène du Bas-Uélé.” xv (2), 159-199. [1935.]

89—Annali d'Igiene.

- a. TIMPANO, P.—“Valore prognostico della v. di s. dei globuli rossi e dell'eosinofilia negli anchilostomiasici.” xlv (4), 263-266. [1935.]

(89a) In 1934 Timpano reported accelerated sedimentation of red cells in hookworm cases: he now discusses the value of this phenomenon in diagnosis and prognosis. The phenomenon cannot replace examination of faeces for eggs since, like the presence of eosinophilia, it is dependent on blood changes which are not in direct proportion to the number of hookworms present. B.G.P.

90—Annals and Magazine of Natural History.

- a. BAYLIS, H. A.—“Some parasitic worms from musk-rats in Great Britain.” (Ser. 10), xv (89), 543-549. [1935.]
- b. BAYLIS, H. A.—“Note on the cestode *Moniezia (Fuhrmannella) transvaalensis* (Baer, 1925).” (Ser. 10), xv (90), 673-675. [1935.]
- c. BAYLIS, H. A.—“Two new parasitic nematodes from Ceylon.” (Ser. 10), xvi (92), 187-192. [1935.]

(90a) From muskrats which now form part of the wild fauna of England, Baylis has found 5 species of helminths, viz., *Notocotylus quinqueserialis*, *Hymenolepis evaginata*, *Taenia taeniaeformis*, *Taenia tenuicollis* and *Capillaria*

hepatica. *T. tenuicollis* has apparently been acquired as a parasite since the introduction of the muskrat into Britain. It is apparently the same as *T. intermedia* recorded from stoats and weasels in Scotland by Cameron & Parnell.

R.T.L.

(90b) From an examination of specimens of *Fuhrmannella transvaalensis* Baer, 1925, found in an "edible rat" *Thryonomys* sp. in Uganda, Baylis concludes that it is not merely a variant of *Moniezia benedeni* but is a distinct species, and gives reasons for the conclusion that *Fuhrmannella* is a synonym of *Moniezia*.

R.T.L.

(90c) *Spinicauda cophotis* n. sp. is extremely close to *S. longispiculata* Baylis, 1929. Of 24 species of *Spironoura* which have been described only one has short spicules like *S. brevispiculata* n. sp. here described from *Rana hexadactyla*.

R.T.L.

91—Annals of Surgery.

a. MUSSER, J. H.—"The social and economic implications of three common southern diseases." *ci*, 572-575. [1935.]

(91a) Musser deals, *inter alia*, with the incidence of hookworm disease in the southern U.S.A.

B.G.P.

92—Annals of Tropical Medicine and Parasitology.

a. WOODLAND, W. N. F.—"A new species of Avitellinine tapeworm, *Avitellina sandgroundi*, from *Hippotragus equinus*." *xxix* (2), 185-189. [1935.]
 b. ADAMS, A. R. D.—"Studies on bilharzia in Mauritius. II. The recovery of adult *Schistosoma haematobium* after development in *Bulinus (Pyrgophysa) forskali*." *xxix* (2), 255-260. [1935.]

93—Annual Report (14th) of the Canadian Plant Disease Survey. 1934.

a. PUTNAM, D. F. & THORNE, G.—"Eelworm disease on oats." pp. 12-13. [1935.]
 b. ANON.—"Nematode (*Aph. fragariae*) on chrysanthemums." p. 83. [1935.]
 c. ANON.—"Nematode (*T. dipsaci*) on iris." p. 86. [1935.]
 d. ANON.—"Nematodes (*A. dipsaci* and *A. pratensis*) on narcissus." p. 88. [1935.]

(93a) Putnam & Thorne record the first case of *Heterodera schachtii* attacking oats in America, about thirty square miles being infected in one district of Ontario, besides other smaller areas.

About 75 farms are involved and in 90% of these the soil was a heavy silty clay loam, excessively high in lime and very strongly alkaline. Oats, wild oats, wheat, speltz and chess were found to be susceptible, very severe damage being shown by seedling oats. The nematode was found to differ markedly from *H. punctata* Thorne.

M.J.T.

(93b) *Aphelenchoides fragariae* was found to be present on 50% of chrysanthemum plants, causing 20% damage in Saanichton County, B.C. Shipments from infected areas were restricted.

M.J.T.

(93c) The stem eelworm, *Anguillulina dipsaci*, was found on 5% of the bulbous iris, Hart Nibbrig, in the garden of the laboratory at Saanichton B.C., and also on a few diseased irises following affected daffodils in the Gordon Head District. T.G.

(93d) The stem eelworm, *Anguillulina dipsaci*, is reported as causing slight to severe injury to narcissus on Vancouver Island, B.C. Attack was serious on one farm but where stocks had been treated for the past 3 years was at a minimum. Root decline caused by *Anguillulina pratensis* was found in patches in the Gordon Head district but on the whole the incidence was slight. T.G.

94—Annual Report (20th) of the Experimental and Research Station, Cheshunt, for 1934.

a. ORCHARD, O. B.—“The eelworm disease of cyclamen.” pp. 68-69. [1935.]

(94a) Orchard gives an account of the disease symptoms of cultivated cyclamen plants whose roots are infected by the root-knot eelworm *Heterodera marionii*.

Young plants harden, exhibit wilting and characteristic swellings on the roots. A number of chemical substances and solutions are listed which have been applied to plants or mixed in composts and have proved ineffectual in checking the parasite. As a control measure it is suggested that plants be raised in steamed or baked soil. It is also recommended that if the previous year's crop was infected the soil in frames should be saturated with a solution of mercuric chloride (1-1,000) before the frames are used again. T.G.

95—Archiv für Schiffs- und Tropen-Hygiene.

a. TEICHLER, G.—“Über die antihelminthische Wirkung der Wurzelrinde von *Vangueria edulis*.” XXXIX (5), 211-213. [1935.]
 b. WOLTER, A.—“Die Ankylostomiasis in den deutschen Siedlungen im Südosten Paraguays.” XXXIX (8), 307-315. [1935.]
 c. CASTENS, E.—“Über Gnathostoma beim Menschen in Siam.” XXXIX (8), 337-342. [1935.]

(95a) Teichler has investigated the antihelmintic properties of a decoction prepared from the root cortex of *Vangueria edulis*. This gave very promising results in the expulsion of ascarids, comparing favourably with oil of chenopodium in this respect. It was not successful against hookworm or *Taenia*. R.H.H.

96—Archives of Internal Medicine.

a. SPINK, W. W.—“Cardiovascular complications of trichinosis.” LVI (2), 238-249. [1935.]

97—Archivio Italiano di Scienze Mediche Coloniali.

a. POGGI, I.—“Parassiti intestinali nei bambini: rilievi statistici e note cliniche.” XVI (5), 321-349. [1935.]
 b. SARANELLI, T.—“La Bilharziosi vescicale nello Yemen e nelle nostre Colonie. Contributo alla Nosografia yemenita, e all'Igiene e alla profilassi coloniale, intercoloniale e intercontinentale.” XVI (6), 410-424. [1935.]

- c. GIOVANNOLA, A.—“Osservazioni sulla natura delle coste nella borsa caudale degli Anchilostomi.” *xvi* (6), 430-436. [1935.]
- d. GIORDANO, M.—“Lo stato attuale della Schistosomiasi in Libia con speciale riguardo alla Schistosomiasi vescicale nel Fezzan.” *xvi* (7), 510-515. [1935.]
- e. POGGI, I.—“Sull'infestazione da *Anchyllostoma duodenale* nel Comune di Vigevano. (Nota preventiva).” *xvi* (7), 516-525. [1935.]

(97c) From the various staining reactions of the bursa of *Ancylostoma caninum*, Giovannola is able to show that the bursal rays contain muscular elements only in their basal portions. Most of the pulp consists of glycogen deposits, with plentiful fat globules around the periphery. He regards the bursal rays as food deposits which are drawn upon during copulation when (he suggests) the male is not able to feed.

B.G.P.

98—Archivos Uruguayos de Medicina, Cirugía y Especialidades.

- a. ETCHECHURY, J.—“Distomatosis por fasciola hepática.” *vi* (3), 302-308. [1935.]

99—Australian Veterinary Journal.

- a. ROSS, I. C. & GORDON, H. McL.—“The effect of starvation on the anthelmintic efficiency of sodium arsenite and tetrachlorethylene.” *xi* (3), 106-109. [1935.]
- b. GORDON, H. McL.—“Efficiency of certain drugs against *Haemonchus contortus*. With a note on the treatment of trichostrongylosis.” *xi* (3), 109-113. [1935.]
- c. BENNETTS, H. W.—“The hookworm *Monodontus trigonocephalus* and other sheep parasites not recorded previously from Western Australia.” *xi* (3), 113-114. [1935.]

(99a) Ross & Gordon found that the starvation of sheep for 24 hours prior to their treatment with sodium arsenite and tetrachlorethylene had no effect on the efficiency of these drugs against *Haemonchus contortus*. With a few exceptions, poor results were obtained from these drugs throughout the experiment and it is suggested that their failure to enter the abomasum direct might account for this.

D.O.M.

(99b) Gordon found that sodium arsenite gave variable and low average efficiency when used alone against *Haemonchus contortus* in sheep but gave excellent results when mixed with copper sulphate. It is thought that the action of copper sulphate in bringing about the closure of the oesophageal groove enabled the drug to enter directly into the abomasum. Good results were also obtained from the use of carbon tetrachloride in 1 and 2 ml. doses. Against *Trichostrongylus* spp. in sheep a mixture of copper sulphate and Black Leaf 40 (40% nicotine sulphate) is recommended.

D.O.M.

(99c) Bennetts considers that *Monodontus trigonocephalus* may be widely distributed in Western Australia and particularly in the south-west where conditions are more favourable for its development. Other nematodes recorded for the first time in this State are *Ostertagia trifurcata*, *Cooperia curiticei* and *Nematodirus spathiger*.

D.O.M.

100—British Medical Journal.

- a. PHILIP, P. W.—“Chloroform treatment for tapeworm.” [Correspondence.] No. 3870, p. 514. [1935.]
- b. CAWSTON, F. G.—“Antimony compounds in bilharzia disease.” [Correspondence.] No. 3882, p. 1148. [1935.]
- c. J.R.F.P.—“Treatment of tapeworm.” [Correspondence.] No. 3891, p. 242. [1935.]
- d. KIRK, J. B. & CANTIN, A. Y.—“Intestinal obstruction by roundworms following administration of an anthelmintic.” No. 3893, pp. 298-299. [1935.]
- e. CLEMENTS, R. G.—“Treatment of tapeworm.” [Correspondence.] No. 3893, p. 326. [1935.]

101—Bulletin de l'Académie de Médecine. Paris.

- a. VELU, H.—“Importance du chien dans la prophylaxie de l'hydatidose.” cxiv (25), 13-15. [1935.]

102—Bulletin de l'Académie Vétérinaire de France.

- a. CURASSON, G.—“Recherches sur le diagnostic des distomatoses à *Fasciola hepatica* et *Amphistomum cervi* par les réactions allergiques.” VIII (1), 77-81. [1935.]

(102a) Curasson has examined the specificity of the cutaneous and intradermal reactions in infestations with amphistomes and liver fluke in sheep and cattle. His experiments seem to show that the reactions are of little value in the diagnosis of these diseases as positive results have been obtained from animals carrying no parasites and negative results have occurred in known carriers. He discusses the possibility of these reactions being caused by haemoglobin or by the lipoids of the parasites.

P.A.C.

103—Bulletin of the Biological Board of Canada.

- a. WARDLE, R. A.—“Fish-tapeworm.” No. 45, 25 pp. [1935.]

(103a) Wardle's paper constitutes a monograph of the “fish-tapeworm,” *Diphyllobothrium latum*, especially as it occurs in Canada.

The first intermediate hosts are species of *Diaptomus*, and the unencysted pleroceroid occurs in the flesh of predatory fresh-water fish, notably *Esox estor*, *Stizostedion vitreum*, *Cynoperca canadense* and *Perca flavescens*. The final hosts are man, bear, mink, cats, and dogs, particularly the husky dog of the Eskimo, Indian and immigrant fisher folk. It is shown that in cats the worm rarely reaches maturity, and that the dog is probably not a serious reservoir host, as only a low percentage of the eggs from this source are viable. It is shown also that the incidence of infection does not coincide precisely with the distribution of immigrants from European tapeworm areas, and that tapeworm was common in Eskimos and Indians before the beginning of such immigration. Very probably, therefore, there is an indigenous physiological race of *D. latum* or of *D. cordatum*, a related species in bears and dogs, side by side with an introduced race.

Pathogenicity appears to be low, there being a negligible number of cases where pernicious anaemia resulted from infection. Ease of detection probably gives an exaggerated impression of the frequency of occurrence. Anthelmintic treatment is outlined and control measures summarized.

E.M.S.

104—*Bulletin de la Société Medico-Chirurgicale de l'Indochine.*

a. MARRIQ & DIEM.—“Un cas d'occlusion du canal hépatique par un Ascaris.” XIII (2), 148-149. [1935.]

105—*Bulletin de la Société de Pathologie Exotique.*

a. JOYEUX, C., SÉDAN, J. & ESMENARD, J.—“Un cas d'onchocercose contractée à la Côte d'Ivoire, avec complications oculaires.” XXVIII (6), 435-438. [1935.]

b. LINDBERG, K.—“Un ver de Médine siégeant au voile du palais.” XXVIII (6), 438-441. [1935.]

c. LAVERGNE, J.—“Le traitement de l'ankylostomiasis par la méthode italienne au chloroforme-huile de ricin.” XXVIII (6), 441-443. [1935.]

(105c) Lavergne draws attention to, and commends from his own experience, the use of chloroform in castor oil against hookworm according to the method of Cavagliano & Ceresoli (1931). The dose is 1 c.c. chloroform per 10 Kg. body weight dissolved in 5 times its volume of castor oil, and is given fasting in the morning and repeated on the 3rd and 5th days. The anthelmintic is cheap and has no contraindications, but it appears to have little effect against other helminths.

B.G.P.

106—*Canadian Journal of Research.*

a. CLARKE, C. H. D.—“Blood parasites of ruffed grouse (*Bonasa umbellus*) and spruce grouse (*Canachites canadensis*), with description of *Leucocytozoon bonasae* n. sp.” XII (5), 646-650. [1935.]

(106a) Although microfilariae were scanty in the blood of two examples of the ruffed grouse adults were not obtained.

R.T.L.

107—*Chinese Medical Journal.*

a. CHUNG, H. L. & LEE, C. U.—“Cysticercosis cellulosae in man with special reference to involvement of central nervous system.” XLIX (5), 429-445. [1935.]

b. HU, S. M. K.—“Preliminary observations on the longevity of infective larvae of *Wuchereria bancrofti* Cobbold in *Culex pipiens* var. *pallens* Coquillett.” XLIX (6), 529-536. [1935.]

c. TAO, C. S., YU, T. H., CHU, P. J. & WANG, C.—“Study on the prevalence of intestinal parasitic infection among school pupils in Shanghai.” XLIX (6), 570-576. [1935.]

d. ZAU, F. D.—“Meningism of helminthic origin. A survey of 43 cases apparently due to infection with helminthiasis and 2 cases apparently due to infection with relapsing fever.” XLIX (7), 689-693. [1935.]

e. WU, K.—“Notes on certain larval stages of the lungfluke, *Paragonimus* in China.” XLIX (8), 741-746. [1935.]

f. LEO, T. L.—“A case of paragonimiasis.” XLIX (8), 784-788. [1935.]

g. FENG, L. C. & YAO, K. F.—“Observations on filariasis in Huchow, Chekiang, China.” XLIX (8), 797-801. [1935.]

(107a) The reported cases of Cysticercosis in man in China are reviewed. Ten cases with involvement of the central nervous system are analysed and diagnosis, treatment and prophylaxis are discussed. One case showed hyperfunction of the thyroid gland due to the presence of cysts.

R.T.L.

(107b) In *Culex pipiens* var. *pallens* the larval stages of *Filaria bancrofti* survived over 79 days in addition to an incubation period of 14 days to reach the infective stage. The significance of this as a factor in the epidemiology of filariasis is discussed. R.T.L.

(107e) Wu describes the second generation redia and the cercaria of *Paragonimus* obtained from *Melania libertina* collected at Dienoya near Shaoshing. He agrees with Ameel that the micro cercous cercaria from *Melania* in Kiukiang described by Faust and later attributed to *Paragonimus* cannot belong to this genus. R.T.L.

108—Comptes Rendus des Séances de l'Académie des Sciences.

a. MATHIAS, P.—“Cycle évolutif d'un trématode holostomide (*Cyathocotyle gravieri* n. sp.).” CC (21), 1786-1788. [1935.]

(108a) *Cyathocotyle gravieri* n. sp. develops in sporocysts in *Bithynia tentaculata*. R.T.L.

109—Comptes Rendus des Séances de la Société de Biologie.

a. DÉVÉ, F.—“Réceptivité de la souris opposée à la résistance du lapin à l'inoculation de sable échinococcique du cheval.” CXIX (19), 351-352. [1935.]
 b. DÉVÉ, F.—“Sur la stérilisation du sable hydatique par les solutions formolées et par les solutions iodées.” CXIX (19), 352-354. [1935.]

(109a) Dévé shows that rabbits are resistant to infection with hydatid obtained from the horse but sensitive to that from the sheep while the converse is true of white mice. They are refractory to sheep material but very sensitive to that from the horse. No difference can, however, be noted morphologically in the scolices. P.A.C.

110—Deutsche Medizinische Wochenschrift.

a. MATTIAUSCH, F.—“Über Vorkommen und Behandlung von Wurmkrankheiten bei Tuberkulösen.” LXI (23), 915-916. [1935.]

111—Deutsche Schlachthofzeitung.

a. BONGERT, J.—“Historische Entwicklung der Finnenfrage.” XXXV (4), p. 45. [1935.]
 b. BONGERT, J.—“Stellungnahme zu dem Artikel des Schlachthofdirektors Dr. Keller—Giessen in der Zeitschrift für Fleisch- und Milchhygiene: ‘Dürfen Kopf, Herz, Zwerchfell und Schlund schwachfinniger Rinder abgekocht dem Metzger als vollwertig freigegeben werden?’” XXXV (4), p. 45. [1935.]
 c. BONGERT, J.—“Herstellung des Kohlensäure-Trockeneises und dessen Anwendung bei der Konservierung der Lebensmittel und zur Abtötung der Rinderfinnen.” XXXV (10), 131-134; (11), 150-153. [1935.]

112—East African Medical Journal.

a. TONKING, H. D.—“Ancylostomiasis [Ancylostomiasis] in Digo District.” XI (5), 149-151. [1935.]

113—Farmers' Bulletin. U.S. Department of Agriculture.

a. NEAL, D. C. & GILBERT, W. W.—“Cotton diseases and methods of control.” No. 1745, 34 pp. [1935.]

(113a) Neal & Gilbert describe the symptoms of attack by *Heterodera marioni* shown by cotton plants and describe the methods by which the nematode is spread. Rotation with non-susceptible crops is recommended as the best method of control and highly susceptible and immune crops are listed. This Bulletin is a revision of No. 1187. M.J.T.

114—Farming in South Africa.

a. LE ROUX, J. C. & STOFBERG, J. F.—“Cultural methods for the control of the root-knot nematode.” x (109), 150-154. [1935.]
 b. MÖNNIG, H. O.—“Worms in sheep. Different types and their control.” x (109), 175-182. [1935.]

(114a) Le Roux & Stofberg record the effects on *Heterodera marioni* of desiccation and starvation induced by various cultural practices.

A plot of infected land was subdivided into 20 small plots of 20 by 30 feet each. The following cultivation methods were adopted for eleven months on these plots, four of which received each treatment. Series A was planted with susceptible crops, series B was unplanted and kept free from weeds by hoeing and ploughing, series C was planted with resistant crops, series D was unplanted but weeds were allowed to grow undisturbed and series E was unplanted but kept free from weeds by hoeing. After this treatment an indicator crop of tomatoes was grown on all plots. Detailed results are given which show that the most satisfactory control followed clean cultivation with ploughing, i.e., starvation and desiccation. Clean cultivation without ploughing and the cultivation of resistant crops also gave some measure of control. M.J.T.

(114b) Mönnig gives a popular account of the structure, life-history, treatment and control of the more important worms in sheep and illustrates his paper with a number of useful photographs. D.O.M.

115—Geneeskundig Tijdschrift voor Nederlandsch-Indië.

a. BONNE, C.—“Over een worminfectie van de submucosa van den dunnen darm.” LXXV (11), 893-904. [English summary pp. 903-904.] [1935.]

(115a) In post mortem examination of Malays from Batavia, Bonne has found three cases in which the submucosa of the jejunum was invaded by nematodes of the *Ancylostoma* type: microphotographs of sections clearly show a pair of teeth guarding the mouth. Eggs and larvae of the hookworm type were also found in the submucosa in two of the cases. *Necator* is the common human hookworm in the island. [The author wrongly supposes that both *A. caninum* and *A. brasiliense* have 6 teeth.] B.G.P.

116—Indian Journal of Medical Research.

a. WRIGHT, R. E., IYER, P. V. S. & PANDIT, C. G.—“Description of an adult filaria (male) removed from the anterior chamber of the eye of man.” xxiii (1), 199-203. [1935.]

(116a) An immature filaria worm agreeing, except in minor details, with the male of *Wuchereria bancrofti* was removed from the anterior chamber of the eye of a Hindu. R.T.L.

117—Indian Journal of Veterinary Science and Animal Husbandry.

a. GORDON, H. McL.—“A note on the treatment of tapeworm (*Moniezia* spp.) infestation of sheep.” v (2), 195-198. [1935.]

(117a) Gordon, experimenting on the treatment of *Moniezia* infestation in sheep, found that a dose of 0.5 gm. of arsenic trisulphide was 100% effective, given either as a powder or suspended in 2% copper sulphate solution. Copper sulphate solution given alone was only effective in 2 out of 3 cases. K.S.

118—Indian Medical Gazette.

a. MALLIK, K. L. B.—“A case of guinea-worm infection.” LXX (5), p. 264. [1935.]

b. MAPLESTONE, P. A. & MUKERJI, A. K.—“The passage of hookworms after treatment.” LXX (6), 320-321. [1935.]

c. MAPLESTONE, P. A.—“The rate of development of hookworm eggs.” LXX (7), 368-371. [1935.]

d. MAPLESTONE, P. A.—“The essentials of bore-hole latrine construction.” LXX (7), 394-396. [1935.]

(118c) Maplestone has investigated the rate of development of hookworm eggs and demonstrates, from observations made on 21 stools passed by 5 patients in the Carmichael Hospital for Tropical Diseases during the hot weather in April and May, that a large number of cells in an egg or even the presence of a fully developed embryo is not incompatible with hookworm infection and that only a small proportion of the eggs may be in the four-celled morula stage even when stools have only been passed a few hours. J.N.O.

(118d) Maplestone summarizes the essentials of bore-hole latrine construction from the publications of Yeager. The hole should have a diameter of 14 to 16 inches and reach subsoil water. This results in the liquefaction of the faeces and the percolation of the contents into the soil. The squatting plate designed by Prasada (1934) prevents the edges caving in, can be readily cleaned, prevents small children from falling in and prevents hookworm infection from faecal contamination of the surrounding soil. R.T.L.

119—Japanese Journal of Experimental Medicine.

a. ISHII, N.—“Studies on bird trematodes. III. Bird trematodes in Japan. (Continued). IV. Seven new bird trematodes.” XIII (3), 275-284. [1935.]

(119a) Ishii records 11 trematode species in the wild duck, 8 spp. in the domestic duck, 4 spp. in the little grebe and 1 sp. in the turkey, all in Japan. These include the following species which are described and figured: *Psilochasmus japonicus* in wild and domestic ducks, *Amphimerus filiformis* and *Apateon parvitesis* in the wild duck, *Patasiger* [*Petasiger*] *grandivesicularis*, *Echinochasmus ruficollis*, *Echinoparyphium brevicauda* and *Cyathocotyle teganuma*, the last 4 from the little grebe. The above 7 species were described as new, in Japanese, in *Yukken Igaku Zasshi*, xix (5), 1935. B.G.P.

120—Journal of Agricultural Research.

- a. ACKERT, J. E., EISENBRANDT, L. L., WILMOTH, J. H., GLADING, B. & PRATT, I.—“Comparative resistance of five breeds of chickens to the nematode *Ascaridia lineata* (Schneider).” L (7), 607-624. [1935.]
- b. THORNE, G.—“Nemic parasites and associates of the mountain pine beetle (*Dendroctonus monticolae*) in Utah.” LI (2), 131-144. [1935.]

(120a) Ackert *et al.* show that not all breeds of chickens are equally susceptible to infestation with the nematode *Ascaridia lineata*. The heavy breeds—Rhode Island Reds and Plymouth Rocks seem to have a greater resistance at all ages than do the light breeds—Leghorns, Buff Orpingtons and Minorcas. Even among white Minorcas the heavier strains are more resistant than the lighter ones.

P.A.C.

(120b) Thorne has studied the nematodes found associated with the Mountain Pine beetle, *Dendroctonus monticolae* Hopk., a pest of the Lodgepole pine, *Pinus contorta*. The specimens were obtained from larval and adult beetles and the bark from infested trees secured from 4 localities in Utah. Morphological descriptions of all the forms are given.

The single endoparasite of the beetle found was *Aphelenchulus reversus* n. sp. ; its life-history is partly outlined. The ecto-parasites and associates of the insect were *Anguillulina pinophila* n. sp., from the beetles' tunnels, *A. magnicauda* n. sp., from the beetles' frass, *Aphelenchoides brachycephalus* n. sp., from the frass and tunnels, *A. talonus* n. sp., *A. tenuidens* n. sp., from under the beetles' elytra, their dead bodies and frass, *A. latus* n. sp., from beneath the elytra and in tunnels, *Diplogaster pinicola* n. sp., from frass and tunnels and *Panagrodontus dentatus* n. g., n. sp., from under the elytra. New information concerning *Rhabditis obtusa* Fuchs, 1915 is given.

Phases of the life-histories and habits of the nematodes are discussed and, in some cases, the differences between the new and the closely related species are mentioned.

J.N.O.

121—Journal of the American Medical Association.

- a. SPINK, W. W. & AUGUSTINE, D. L.—“The diagnosis of trichinosis with especial reference to skin and precipitin tests.” CIV (20), 1801-1805. [1935.]
- b. HUNNICUTT, T. N.—“An anemia associated with a fish tapeworm (*Diphyllobothrium latum*) infestation.” CIV (22), 1984-1986. [1935.]
- c. WAITE, C. H. & GORRIE, R.—“A *Gongylonema* infestation in man.” CV (1), 23-24. [1935.]

(121c) A male *Gongylonema* identified as *G. pulchrum* (Molin 1857) was withdrawn by the patient from the “ roof of his mouth.”

R.T.L.

122—Journal of the American Veterinary Medical Association.

- a. HOBMAIER, M. & HOBMAIER, A.—“Mammalian phase of the lung-worm *Aelurostrongylus abstrusus* in the cat.” LXXXVII (2), 191-198. [1935.]

(122a) The early development of *Aelurostrongylus abstrusus* up to the infective stage takes place, according to M. & A. Hobmaier, in various snails and slugs and not in mice as reported by Cameron (1927).

Mice, as well as a large range of other animals, may act as auxiliary hosts in which the infective larvae from molluscs are stored as parasitic tubercles in the body cavity. Both the infective larvae from snails and the tubercles from the auxiliary hosts can produce infections if ingested by cats. The authors also deal with the morphology and bionomics of the developmental stages in the cat's lung.

D.O.M.

123—Journal of the Bath and West and Southern Counties Society.

a. WALTON, C. L., OGILVIE, L. & MULLIGAN, B. O.—“The effect of calcium cyanamide and of formalin on pea ‘sickness’.” Series 6, IX, pp. 137-140. [1935.]

(123a) Walton, Ogilvie & Mulligan describe the effects of formalin and calcium cyanamide on the growth of peas in soil infected with the pea strain of *Heterodera schachtii*.

The experiments were carried out at two centres. Calcium cyanamide was applied at the rate of 10 cwt. per acre and formalin in a 1-50 solution at the rate of 1 gal. per yard. Control plots were left untreated and four varieties of peas were used. Varietal resistance was found to differ slightly. Calcium cyanamide dressings resulted in vigorous plants, formalin treatment showed an increase in growth as compared with the controls. Cysts were present on the roots in all cases but were slightly less numerous on the plants in treated soil. Foot rot was severe in all cases.

M.J.T.

124—Journal of the Chosen Medical Association.

a. NAKATA, K.—“A Rhabditis from human feces.” xxv (3), 308-317. [In Japanese: English summary p. 19.] [1935.]

(124a) From a case of human infection, *Rhabditis usuii* Watanabe (1927) is described. This species varies slightly from *R. elongata* Schneider (1866).

R.T.L.

125—Journal of Comparative Pathology and Therapeutics.

a. TAYLOR, E. L.—“*Syngamus trachea*. The longevity of the infective larvae in the earthworm. Slugs and snails as intermediate hosts.” XLVIII (2), 149-156. [1935.]

(125a) Taylor shows that gapeworm larvae can remain viable and infective in earthworms for three and a half years. Certain snails and slugs are also capable of conveying the larvae, which may distribute themselves anywhere in the tissues but which have, however, a predilection for the cerebral nerve ganglia. He was unsuccessful in his attempts to transmit the gapeworm by means of flies or by a variety of common field invertebrates. These intermediate hosts act not only as vectors but also as efficient storing agents of the infective larvae. That the gapeworm has affinities with the Metastrongylidae is suggested, according to this author, by the facts of the use of an intermediate host, the situation of the adult worms in the respiratory system and by the structure of the bursa in the male.

P.A.C.

126—Journal of the Egyptian Medical Association.

- a. HAṢSAN, A. & SALAH, M.—“Investigation on carbon tetrachloride intoxication.” XVIII (4), 207-214. [1935.]
- b. AZIM, M. A.—“The epidemiology and endemiology of schistosomiasis in Egypt.” XVIII (4), 215-227. [1935.]
- c. KHALIL, M.—“A discussion on the criteria of cure from bilharzia.” XVIII (4), 228-231. [1935.]
- d. SALAH, M.—“The types of splenomegaly in Egypt and their diagnosis.” XVIII (4), 255-266. [1935.]
- e. ASHKAR, M. F. & ISSA, I. I.—“Bilharzial haemospermia.” XVIII (4), 274-283. [1935.]
- f. KHALIL, M.—“Chemotherapy of schistosomiasis.” XVIII (4), 284-296. [1935.]
- g. SALAM, A. A.—“A new antigen for the diagnosis of bilharziasis by the complement fixation test.” XVIII (5), 353-355. [1935.]
- h. KHALIL, M. & AZIM, M. A.—“The introduction of schistosoma infection through irrigation schemes in the Asswan area, Egypt.” XVIII (6), 371-377. [1935.]
- i. KHALIL, M. & SALAH, M.—“Some clinical manifestations of ancylostomiasis.” XVIII (6), 378-387. [1935.]
- j. KHALIL, M.—“The aetiological rôle of filariasis in endemic funiculitis and hydrocele in Egypt.” XVIII (6), 389-395. [1935.]
- k. SALAH, M.—“Studies on anaemia in Egypt. I. Methods of investigation. II. Helminthic anaemias. III. Treatment and mechanism of helminthic anaemia. IV. Rarity of Addisonian anaemia in Egyptians.” XVIII (7), 425-437; 438-454; 455-472; 473-482. [1935.]
- l. NAGATY, H. F.—“*Parlitomosa zakii* (Filariinae). A new genus and species and its microfilaria from *Leontocebus* [*Leontocebus*] *rosalia*.” XVIII (7), 483-496. [1935.]
- m. TURNER, E. L., DENNIS, E. W. & BERBERIAN, D. A.—“Studies on the production of artificial immunity against *Echinococcus granulosus* in the definitive host. (The results of four years investigation of this problem).” XVIII (8), 536-546. [1935.]

(126a) Hassan & Salah discuss the possible factors which might predispose to carbon tetrachloride poisoning. This appears to have no relation to the amount of the drug administered, or to the presence of chemical impurity. Uncomplicated liver cirrhosis due to bilharziasis is stated not to be a contra-indication to the administration of the drug. Experiments on animals and humans suggested that calcium deficiency is not a predisposing factor. The possible connection between carbon tetrachloride poisoning and the heavy *Ascaris* infection which is frequently associated with it, requires further investigation.

R.H.H.

(126b) In Egypt the absence of *Bullinus* spp. in areas under Basin irrigation is attributed to the very dry hot atmosphere and absence of water from the cultivated lands which make their propagation impossible. In the Delta the prevalence of *Sch. mansoni* is due to the presence of *Planorbis boissyi*, the growing of rice and the humidity of the atmosphere. The presence of many dead-end canals and of numerous private water lifting systems explains the frequency of *Sch. mansoni* around El Marg. *Sch. haematobium* occurs in 63.5% of the population of the Dakla Oasis. It is present in some villages of the Baharia Oasis but absent from Farafra. It is also absent from the Siwa Oasis where the water is saline. In dealing with the effect of drying on *Planorbis* in canals Azim states that *Planorbis* when sheltered from the direct rays of the sun can survive $3\frac{1}{2}$ months. In the discussion Khalil states that

Bullinus alone occurs in the Blue Nile where the water is very soft, while Planorbis is found in the White Nile which has a higher salt content. Hilmy has obtained sporocysts of *S. haematobium* in experimentally infected Planorbis.

R.T.L.

(126d) According to Salah the endemic splenomegaly of Egypt belongs to the hepatolieneal group of diseases and is primarily a liver disease of bilharzial cirrhotic (mostly hypertrophic) nature, the splenic enlargement being one of its frequent manifestations.

R.T.L.

(126f) The disadvantages of the present method of treating bilharziasis with intramuscular injections of Fouadin or intravenous injections of tartar emetic are in the long period over which the treatment has to be administered and the failure of 50% of the cases to complete the course of treatment. Contrary to Fisher it has been found that Acriflavine has no curative effect over a long period.

R.T.L.

(126g) Salam finds that alcoholic and saline extracts of *Schistosoma bovis* are sometimes useful in the diagnosis of bilharziasis by the complement fixation test. Unfortunately infected cattle reacted negatively to their specific antigen but patients harbouring allied schistosomes were positive and remained positive for some years after antimony cure.

P.A.C.

(126k) In the first of these four lectures on anaemia in Egypt Salah deals with methods of investigation, viz., clinical, haematological and parasitological examination and investigation of the gastro-intestinal tract. The second discusses the data obtained from applying these procedures to 762 cases of helminth anaemia. The third deals with the response of helminth anaemia to various therapeutic measures and the mechanism of its production. The author discusses the factors which interfere with the utilization of iron when administered. Although blood loss and possibly toxins are contributing factors the essential and more important mechanism in the production of helminth anaemia is nutritional deficiency resulting from deficient diet and gastro-intestinal lesions. He accordingly recommends massive doses of iron to make up for deficient absorption and fats and proteins to aid in the construction of the haemoglobin molecule. The fourth lecture deals only with Addisonian anaemia.

R.T.L.

(126l) A new species of Filariinae found in the pectoral muscles of the lion tamarin, *Leontocebus rosalia*, has necessitated the creation of the genus *Parlitomosa*, with *P. zakii* n. sp. as type. It differs from *Litomosa* in the character of the oral vestibule and the presence of genital papillae, caudal alae and a trifid tail in the male. Points of difference from *Litomosoides*, *Breinlia* and *Macdonaldius* are also mentioned.

R.T.L.

(126m) Using antigens prepared from scolices alone, from scolices and membranes of fertile cysts and from hydatid sand and membranes from sterile cysts, Turner *et al.* have succeeded in establishing a partial immunity in dogs against intestinal infection with *Echinococcus granulosus*. They report that some dogs seemed to have a natural resistance to infestation, even without artificial immunization. They also have evidence that it may be possible to set up some degree of immunity in sheep, the intermediate host, to the cyst. They have found that the Casoni reaction has no value in indicating the presence of adult parasites in dogs.

P.A.C.

127—Journal of Helminthology.

- a. TRIFFITT, M. J.—“On cyst-like bodies, resembling cysts of *Heterodera schachtii* of common occurrence in British soils.” XIII (2), 59-66. [1935.]
- b. BUCKLEY, J. J. C.—“Some observations on *Necator suillus* Ackert and Payne, 1922.” XIII (2), 67-76. [1935.]
- c. CARROLL, J. & McMAHON, E.—“Potato eelworm (*Heterodera schachtii*) investigations.” XIII (2), 77-90. [1935.]
- d. GOODEY, T.—“Observations on a field plot experiment with *Anguillulina dipsaci* on potatoes.” XIII (2), 91-102. [1935.]
- e. LAPAGE, G.—“The second ecdysis of the infective larvae of certain Trichostyliidae in solutions of sodium sulphide and of organic compounds containing sulphur.” XIII (2), 103-114. [1935.]
- f. LAPAGE, G.—“The behaviour of sterilised exsheathed infective Trichostyliid larvae in sterile media resembling their environment in ovine hosts.” XIII (2), 115-128. [1935.]
- g. EDWARDS, E. E.—“On *Heterodera schachtii*, with special reference to the oat race in Britain.” XIII (2), 129-138. [1935.]
- h. CLAPHAM, P. A.—“Some helminth parasites from partridges and other English birds.” XIII (3), 139-148. [1935.]
- i. TRIFFITT, M. J.—“On the origin of strains of *Heterodera schachtii* occurring in Britain, with special reference to the beet-strain.” XIII (3), 149-158. [1935.]
- j. PETERS, B. G.—“The vinegar eelworm in tan liquor.” XIII (3), 159-162. [1935.]
- k. OLDHAM, J. N.—“Further observations on the incidence of parasitism of flea beetles by the nematode, *Howardula phyllotretae*.” XIII (3), 163-166. [1935.]
- l. GOODEY, T.—“*Aphelenchoides hodsoni* n. sp., a nematode affecting narcissus bulbs and leaves.” XIII (3), 167-172. [1935.]
- m. GOODEY, T.—“Observations on a nematode disease of yams.” XIII (3), 173-190. [1935.]

(127a) Trifft describes small bodies somewhat resembling cysts of *Heterodera schachtii* which occur very commonly in soil. Several morphological distinctions between these bodies and eelworm cysts are described. It is shown that these bodies are in no way related to *Heterodera schachtii*.

M.J.T.

(127b) *Necator suillus* is specifically distinct from *N. americanus*. It is distinguishable morphologically by dorsal cuticular ridges, and marked difference in the telamon and in spicular length as well as in less striking differences in the mouth and in the dorsal rays already noted by Ackert & Payne.

R.T.L.

(127c) Carroll & McMahon describe series of experiments which throw light on the correlation between *Heterodera schachtii* and “potato sickness.” Soil with a cyst content of 4 per c.c. may produce “potato sickness” in its most severe form. A correlation between cyst content of soil up to 4 cysts per c.c., and intensity of symptoms is shown to exist. “Potato sickness” occurs in plants grown in soil which has never previously grown potatoes if *H. schachtii* is artificially added. Experiments show that the root excretion of plants grown in recently sterilized soil is so changed that it fails to stimulate larvae of *H. schachtii* to emerge from the cysts. This effect persists for up to 30 days. It is also shown that when the plant makes good root growth before being attacked by *H. schachtii*—as in recently sterilized soil—symptoms of “potato sickness” are not shown although cysts may be very numerous on the roots.

M.J.T.

(127d) Goodey gives an account of observations on potatoes grown in a field plot infested with the potato strain of *Anguillulina dipsaci* from 1929 to 1934.

The main plot was divided into 30 smaller ones and 10 varieties of potatoes, earlies, second-earlies and main-crops, were grown in triplicate. At the end of each season the percentage infestation on each small plot was determined and the results for each year are set out in tabular form. Following a heavy dressing of pulped diseased tubers to the whole plot in 1929 the crop taken in that year was heavily infected. In 1930 the degree of infection was lower and in 1931, on a fresh range of main-crop varieties, was still lower. In 1932 the plot was reduced to about a half its original size but the same scheme of cropping was followed on 16 small plots and again the degree of infestation was low. In 1933 and 1934 only 8 of the small plots carried potatoes; the other 8 being planted with other possible rotational crops. Except in the case of one or two of the small plots which showed an anomalous and comparatively high infection and which are discussed, the degree of infection was low. None of the other crops showed any sign of invasion by the parasite. In a final discussion the author concludes that with the lifting of the crop each year the source of infection is removed and that even where potatoes are grown on the same land year after year the infestation declines rather than increases.

T.G.

(127e) Lapage has found that dilute solutions of certain organic and inorganic sulphides bring about the exsheathment of infective larvae of sheep trichostrongyles. In some cases the sheaths were distended and made tenuous, in others they were completely dissolved. Artificial exsheathment is not as satisfactory with sulphides as with hypochlorites [see Helm. Abs., Vol. II, No. 105a].

B.G.P.

(127f) Lapage has endeavoured to culture the exsheathed infective (3rd stage) larvae of trichostrongyles, using over 200 different media in hanging drop and other preparations. Some media were used sterile; to others, various bacteria were added; but the larvae appeared to be indifferent to their presence. The larvae failed to grow and, whilst most formed the 3rd sheath, only 10 out of over 1,500 performed the 3rd ecdysis, after which they immediately died. This 3rd stage extended over 18 to 30 days in most cases.

B.G.P.

(127g) Edwards describes the history and distribution of the oat race of *Heterodera schachtii* in Britain together with field observations and pot experiments to determine the host-ranges of the potato race, the pea race and the oat race.

The oat race was found to be fairly widely distributed in Shropshire and to cause considerable damage to crops. Fifty-two species of plants were tested for susceptibility to attack by the 3 nematode races. The potato race was found to attack potatoes only; the pea race attacked peas, dwarf and broad beans, vetch, red clover, potato, radish and mustard; the oat race attacked in varying degrees oats, barley, wheat and rye and also red clover and perennial and Italian rye grass. The importance of these host ranges in relation to control by crop rotation is discussed.

M.J.T.

(127h) During a survey of 380 partridges, Clapham has recovered 6 species of nematodes and 9 of cestodes, of which 7 are recorded from the

partridge for the first time. The helminth faunae of a small number of red leg partridges, pheasants, grouse and quails have also been examined. A number of helminths are recorded for the first time from these hosts also. No new species are described.

P.A.C.

(127i) Triffitt records the finding of soil containing the beet strain of *Heterodera schachtii* in bags of imported sugar-beet seed. Dry heat treatment of seed is found to be useless as a means of sterilization. The host ranges of strains attacking beet, peas, cereals and potatoes are discussed with reference to the means of dispersal of the several strains occurring in Britain. M.J.T.

(127j) Peters reports the vinegar eelworm, *Turbatrix aceti*, from the liquor used in tanning leather. It is doubtful whether this represents a distinct variety of the species.

B.G.P.

(127k) Oldham amplifies his observations on the incidence of parasitism of Flea beetles by *Howardula phylloptetrae*, made during 1931, by the publication of data referring to 1932 and 1933 [see Helm. Abs., Vol. II, No. 94a]. In both years males and females of the four species of *Phylloptetra* studied were parasitized except *P. cruciferae* during 1933; there was little difference in the degree of parasitism between the sexes of each beetle species. By including the data for 1931 a definite variation in the incidence of parasitism in the three individual years was observed. Fluctuations in the percentage parasitism, when the average incidence of infestation for all species of beetles during each year was considered, apparently corresponded with weather conditions. A hot dry summer produced a low infestation while the reverse occurred in a wet, moderately warm season. Out of 3,400 insects examined only 4 harboured nematodes and Hymenopterous parasites coincidentally. The investigations are summarized in a tabular statement. J.N.O.

(127l) Goodey describes and figures *Aphelenchooides hodsoni* n. sp. parasitic in bulbs and leaves of narcissus of the variety "Sir Watkin" originating from the Isles of Scilly.

Full grown adults are comparatively long; females reaching 1.3 mm. and males 1.01 mm. The new species differs from the strawberry and chrysanthemum eelworm in the following features: (i) the relative shortness of the tail, (ii) the blunt terminus of the tail, (iii) the presence of a narrow tail process always located on the ventral side of the tail end, (iv) the rather flattened sides of the oesophageal bulb, (v) the fact that the crescentic thickenings of the oesophageal bulb are situated behind the centre of the bulb, (vi) the forward position of the excretory pore in front of or on the level of the nerve ring and (vii) the comparative shortness of the post-vulval uterine sac. The systematic position of the new species is discussed and symptoms of disease are given.

T.G.

(127m) Goodey gives a detailed account of the adult anatomy of *Anguillulina bradys* (Steiner & LeHew), a nematode parasitizing yams in Nigeria, and also deals with bionomics.

It is shown that there is no regular quadrangular network of surface markings on the lateral fields such as is found in *Hoplolaimus coronatus* Cobb. Lateral caudal papillae are present in both male and female. The parasite is transferred from the genus *Hoplolaimus* to *Anguillulina*. Symptoms of disease are given and in an account of the pathology evidence is produced that the

parasite acts intracellularly and destroys cell walls and contents, especially just beneath the skin of the tuber. Three species of yam are listed as hosts of the parasite in Nigeria.

T.G.

128—Journal of Heredity.

a. HAGAN, H. R. & COLLINS, J. L.—“Studies on varietal resistance of pineapple plants. Part II. Plant resistance to *Heterodera marioni* (Cornu) Goodey.” *xxvi* (1), 35-46. [1935.]

(128a) Hagan & Collins describe the degrees of resistance to *Heterodera marioni* shown by four varieties of pineapple.

The varieties tested were Cayenne, Lot 520 (F_1 hybrid of Cayenne x Wild Brazil), Pernambuco and Wild Brazil. Wild Brazil was most strongly resistant, while Lot 520, Pernambuco and Cayenne showed progressively less resistance. Average numbers of roots were not reduced by nematode attack but the average root length was reduced in Cayenne and Pernambuco. Weight of leaves was adversely influenced except in Wild Brazil, which appeared to be almost immune to effects of nematode damage, the number of leaves per plant did not seem to be affected by the nematode in these experiments.

M.J.T.

129—Journal of the Japanese Society of Veterinary Science.

a. ONO, S.—“Studies on the trematodes, invading *Lymnaea* snails as the first intermediate hosts, found in the vicinity of Mukden. I. On the structure of their cercariae, effects of their infestation on the host snails, as well as the cyst-formation of stylet-cercariae by the action of the mammalian blood serum.” *xiv* (1), 24-35. [In Japanese: English summary pp. 36-38.] [1935.]

(129a) Of *Lymnaea pervia* (?) in the vicinity of Mukden 1% are infected with *Fasciola hepatica*. In a larger *Lymnaea* three types of cercariae occur: a fork-tailed form, two kinds of Echinostome cercariae and a styled form, apparently a *Plagiorchis*, which encysted in normal serum of guinea-pigs, rabbits and cattle.

R.T.L.

130—Journal of Laboratory and Clinical Medicine.

a. GOLOB, M.—“Transduodenal treatment of *Taenia saginata* infestation.” *xx* (8), 841-843. [1935.]

b. HEADLEE, W. H.—“Studies on infections of human parasitic worms under institutional conditions.” *xx* (10), 1069-1077. [1935.]

(130b) Headlee has carried out at the Kankakee State Hospital (Illinois) a survey to determine the incidence of helminth infections among patients. Methods of diagnosis used were the direct smear, the Willis flotation method and perianal scrapings. Some patients were examined by all three methods and results indicated that perianal scrapings was the only method approaching reliability in diagnosis of *Enterobius vermicularis* infection. 876 examinations of 652 patients were made and only ova of *E. vermicularis* were found in 74 or 11.35% of all patients examined. The author discusses the spread of this worm under institutional environment. Wards having a high percentage of mentally deteriorated individuals had a higher incidence of infection but there was no marked incidence among the different age groups.

J.N.O.

131—Journal of the Ministry of Agriculture. London.

a. LAPAGE, G.—“Blackhead disease of turkeys.” *XLII* (3), 246-251. [1935.]

(131a) Lapage discusses the present position with regard to blackhead in turkeys. Amongst other precautionary measures he suggests the removal by medication of *Heterakis*, the eggs of which have been shown to transmit the disease.

P.A.C.

132—Journal of Oriental Medicine.

a. SAITO, Y.—“Intestinal parasites of prisoners in Dairen prison.” *XXII* (4). [English summary p. 59.] [1935.]

b. KAMIMURA, T.—“Report of a case of pulmonary abscess caused by the migration of an adult *Ascaris* in bronchi with a review of literature on the injuries caused by *Ascaris lumbricoides*.” *XXII* (4), [English summary p. 62.] [1935.]

133—Journal of Parasitology.

a. WALLACE, F. G.—“A morphological and biological study of the trematode, *Sellacotyle mustelae* n. g., n. sp.” *XXI* (3), 143-164. [1935.]

b. TAYLOR, E. L.—“Seasonal fluctuation in the number of eggs of Trichostyngiid worms in the faeces of ewes.” *XXI* (3), 175-179. [1935.]

c. TURNER, E. L., DENNIS, E. W. & BERBERIAN, D. A.—“The value of the Casoni test in dogs.” *XXI* (3), 180-182. [1935.]

d. HUNTER, W. S. & HUNTER, G. W. III.—“Studies on *Clinostomum*. II. The miracidium of *C. marginatum* (Rud.).” *XXI* (3), 186-189. [1935.]

e. LOEWEN, S. L.—“A new trematode of the family Gorgoderidae.” *XXI* (3), 194-196. [1935.]

f. HOLL, F. J. & ALLISON, L. N.—“*Zeugorhynchus natricis* n. sp. a trematode from the water snake.” *XXI* (3), 197-199. [1935.]

g. ACKERT, J. E. & EISENBRANDT, L. L.—“Comparative resistance of bronze turkeys and white leghorn chickens to the intestinal nematode, *Ascaridia lineata* (Schneider).” *XXI* (3), 200-204. [1935.]

h. ACKERT, J. E., PORTER, D. A. & BEACH, T. D.—“Age resistance of chickens to the nematode *Ascaridia lineata* (Schneider).” *XXI* (3), 205-213. [1935.]

i. CHANDLER, A. C.—“A new Tetrarhynchid larva from Galveston Bay.” *XXI* (3), 214-215. [1935.]

j. ALICATA, J. E.—“*Oesophagostomum longicaudum* Goodey, 1925, a synonym of *Oesophagostomum quadrispinulatum* (Marcone, 1901).” *XXI* (3), 215-216. [1935.]

k. McMULLEN, D. B.—“A note on the relationship of the Telorchinae and the Reniferinae.” *XXI* (3), 217-219. [1935.]

l. MCRAE, A.—“A study of the moisture requirements of the eggs of the chicken ascarid, *Ascaridia galli*.” *XXI* (3), p. 220. [1935.]

m. MANTER, H. W.—“*Lomasoma*, new name for *Lomaphorus*, Manter, 1934 (Trematoda).” *XXI* (3), 220-221. [1935.]

n. ALICATA, J. E.—“Encysted spirurid larvae from the cat flea, *Ctenocephalides felis*.” *XXI* (3), 221-222. [1935.]

o. MCRAE, A.—“The extra-corporeal hatching of *Ascaris* eggs.” *XXI* (3), 222-223. [1935.]

p. CHITWOOD, B. G.—“The nature of the ‘cell body’ of *Trichuris* and ‘stichosome’ of *Agameris*.” *XXI* (3), p. 225. [1935.]

q. PORTER, D. A.—“Studies on the pathology of *Nippostrongylus muris* in rats and mice.” *XXI* (3), 226-228. [1935.]

- r. MILLER, E. L.—“Studies on North American cercariae.” *xxi* (4), 244-254. [1935.]
- s. EKBAUM, E.—“Notes on the species of *Trienophorus* in Canada.” *xxi* (4), 260-263. [1935.]
- t. CROSS, S. X.—“The effect of parasitism on growth of perch in the Trout Lake region.” *xxi* (4), 267-273. [1935.]
- u. LUHMAN, M.—“Two new trematodes from the loggerhead turtle (*Caretta caretta*).” *xxi* (4), 274-276. [1935.]
- v. SARLES, M. P. & STOLL, N. R.—“On the resistance of the cat to superimposed infection with the ascarid, *Toxocara cati*.” *xxi* (4), 277-291. [1935.]
- w. FOSTER, A. O.—“Further observations on prenatal hookworm infection of dogs.” *xxi* (4), 302-308. [1935.]
- x. HUNNINEN, A. V.—“Infection of abnormal hosts with the mouse strain of *Hymenolepis fraterna*.” *xxi* (4), p. 312. [1935.]
- y. NOLF, L. O. & EDNEY, J. M.—“Minimum time required by *Trichinella spiralis* to produce infective larvae.” *xxi* (4), 313-314. [1935.]
- z. PORTER, D. A.—“*Nippostrongylus muris* in the deer mouse, *Peromyscus maniculatus*.” *xxi* (4), p. 314. [1935.]
- za. HOPKINS, S. H.—“A larval *Echinocephalus* in a sea urchin.” *xxi* (4), 314-315. [1935.]
- zb. WALTON, A. C.—“The Nematoda as parasites of Amphibia. II. Correction.” *xxi* (4), p. 315. [1935.]
- zc. WOODBURY, L. A.—“Infectivity of the plerocercoids of *Diphyllobothrium cordiceps* (Leidy) for man.” *xxi* (4), 315-316. [1935.]
- zd. HOPKINS, S. H. & WHEATON, E. “Intestinal parasites of English sparrows in Illinois.” *xxi* (4), 316-317. [1935.]
- ze. KERR, K. B. & PETKOVICH, O. L.—“Active immunity in rabbits to the liver fluke, *Fasciola hepatica*.” *xxi* (4), 319-320. [1935.]

(133b) The counts of Trichostrongylidae eggs in the faeces of breeding ewes are lowest during the winter months and reach a peak in June. This seasonal variation does not appear to synchronise with the intake of infective larvae and is thought by Taylor to be referable to the rate of egg production of the adult females.

R.T.L.

(133c) No direct correlation was observed between the presence of *Echinococcus granulosus* in dogs and positive skin reactions to the intradermal Casoni test which is therefore of no practical value as an index of intestinal infection.

R.T.L.

(133e) Loewen gives a morphological description of *Catoptrodes lohrenzi* n. sp. from the urinary bladder of the green or blue spotted sunfish, *Apomotis cyanellus* taken from the Cottonwood River, Marion, Kansas. The new species differs from other known members of the genus in its colour and shape, in being the smallest one in size when fixed, in having a large oral sucker and in having the ratio between oral sucker and acetabulum less than in most other species. Its nearest relative appears to be *C. lacustri*. In a brief discussion of the genus *Catoptrodes* the author recognizes six species, which are listed, as belonging to it.

J.N.O.

(133g) After infecting chicks and turkeys of the same age with *Ascaridia lineata*, Ackert & Eisenbrandt conclude that turkeys are significantly more resistant to infestation with this parasite than are chickens. Hence chickens are more important factors in the dissemination of eggs than are turkeys of the same age.

P.A.C.

(133h) Ackert, Porter & Beach find that chickens develop an increasing resistance to infestation with *Ascaridia lineata* with increasing age, the maximum degree being reached at the age of 93 days. They suggest that this is due to the development of more potent growth-inhibition factors which react against the development of the nematodes. P.A.C.

(133i) The spotted sea trout of Galveston Bay is frequently infested with tetrarhynch larvae of a new species, *Otobothrium robustum*. Like *O. balli*, it has ciliated pits midway on the lateral margins of the bothria, but differs from this species in the size and arrangement of the hooks. R.T.L.

(133k) A striking resemblance between the developmental stages of the Plagiorchidae and those of the Reniferinae indicates the importance of the study of the larvae since these resemblances are not so evident in the adults. R.T.L.

(133l) McRae has found that eggs of *Ascaridia galli* will not survive in an atmosphere whose average relative humidity is below 81%, while for the eggs of *Ascaris lumbricoides* the necessary humidity is 80% at 22°C. Eggs of *Parascaris equorum* and *Toxocara canis* are more resistant as they survive in atmospheres whose relative humidities are 40% to 50% and 77% at 22°C. respectively. P.A.C.

(133n) In Nebraska Alicata found Spirurid larvae, in a *Ctenocephalides felis* on a domestic cat, which possibly represent the developing stages of a spirurid in cats or dogs as they are larger than the larvae of *Protospirura muris* which occur in the rat flea. R.T.L.

(133o) McRae believes that the many reports of the hatching of Ascaris eggs are misleading. Mechanical action is the only factor which will cause extracorporeal hatching with any degree of regularity and may even be the cause of hatching in the lumen of the intestine after the shells are weakened by chemical action. R.T.L.

(133p) Chitwood has investigated the significance of the cells closely associated with the posterior part of the oesophagus in trichurids and mermitids and has found that, in *Trichuris*, each cell of the "cell body" has a separate opening into the lumen of the oesophagus, the orifices alternating. The author now definitely considers these cells to be oesophageal glands. In parasitic larval *Agameris decaudata* each "stichocyte" is likewise an oesophageal gland with an opening into the lumen of the oesophagus. The author considers that these structures in the two examples studied are homologous and advances a plea for the adoption of "stichosome" as a more appropriate term for them than "cell body" or "paroesophageal body". J.N.O.

(133q) In experimentally infected mice *Nippostrongylus muris* produces severe lobar pneumonia due to the destruction of tissue during pulmonary migration. In the intestines the worms migrate extensively in and out among the villi causing local destruction and shrinking of the tissue. R.T.L.

(133r) Miller describes eight new species of cercaria from molluscs in Illinois. This brings the number now recorded in Illinois to 38. R.T.L.

(133s) *Triaenophorus crassus* is the common species of the genus in Canadian pike. *T. nodulosus* is rare. R.T.L.

(133t) The difference in weight and length of fish with light infestations over the average heavily infested fish is greater in 4 year old perch from Nebish Lake, where the lightly infested are 27% longer and 120% heavier than heavily infested fish of the same age. In older fish little variation in size can be correlated with parasitic infection present in the fish when caught.

R.T.L.

(133u) *Hapalotrema synorchis* n. sp. parasitic in the heart and *Pyelosomum longicaecum* n. sp. in the intestine of the marine turtle *Caretta caretta* at Tortugas, Florida, are recorded.

R.T.L.

(133v) The cat has been found to be amazingly refractory to superimposed infection with *Toxocara cati*. Eggs in small or large single doses or in weekly doses of constant or increasing size uniformly failed to cause any considerable degree of parasitization. As these results occur in the absence as well as in the presence of worms from previous infections they would appear to have their origin in the host and not to be attributable to parasitic crowding solely.

R.T.L.

(133w) The oral administration of single doses of infective larvae of *Ancylostoma caninum* at intervals of 5, 9 and 32 days before parturition resulted in prenatal infection in 20 out of 21 puppies. Although the bitches were very resistant the young did not appear to be protected. One litter of 5 puppies was prenatally infected by the administration of the cat strain to the bitch only 2 days before parturition.

R.T.L.

(133y) Nolf & Edney find that after feeding rats with *Trichinella spiralis* the new generation of larvae is not infective to other rats during the first 17 days.

P.A.C.

(133zb) For *Capillaria brevicollis* Walton 1935, a homonym of *C. brevicollis* Bittner 1926, the new name *C. brachyuchenia* is proposed.

R.T.L.

(133zc) Attempts to infect man with the pleroceroids of *Diphyllobothrium cordiceps* were unsuccessful.

R.T.L.

(133zd) The 9 cestodes found in 131 *Passer domesticus* in Illinois proved to be *Choanotaenia passerina*.

R.T.L.

(133ze) A series of intraperitoneal injections of 1 c.c. of a 1% suspension of dried *Fasciola hepatica* in physiological saline at intervals of 1 or 2 days over a period of 3 weeks gave rabbits a partial resistance to subsequent infections with *F. hepatica* cercariae. In the immunized animals the flukes showed calcification and no eggs were passed in the rabbit faeces.

R.T.L.

134—Journal of the Philippine Islands Medical Association.

a. AFRICA, C. M., GARCIA, E. Y. & LEON, W. DE.—“Intestinal Heterophyiasis with cardiac involvement: a contribution to the etiology of heart failure.” xv (7), 358-361. [1935.]

(134a) In four human cases the eggs of four species of Heterophyidae were found in the cardiac muscles and in one instance an adult fluke was recovered. The species involved were *Monorchotrema taichui*, *M. taihokui*, *Diorchotrema pseudocirrata* and *Heterophyes breviceca*. It is suggested that owing to their small size the eggs may be found in other organs, e.g., the brain, spinal cord, spleen, lungs, kidneys. The symptoms observed are similar to

those manifested by cardiac beri-beri. The histological lesions are marked interstitial and subepicardial oedema, intense capillary injection with haemorrhage in the epicardium, fragmentation of muscle fibres, and embolism of the vessels. There was a lack of degeneration or hypertrophy and ordinary infiltrate phenomena or proliferative changes indicate that the condition is one of acute crisis due to a sudden flooding of the cardiac vessels with massive doses of eggs which will prove fatal if in vital spots.

R.T.L.

135—Journal of the Royal Army Medical Corps.

- a. DIXON, H. B. F. & SMITHERS, D. W.—“Cysticercosis (*Taenia solium*).” LXIV (5), 300-306; (6), 375-380; LXV (1), 28-34; (2), 91-98. [1935.]
- b. LINDEMAN, S. J. L. & LYBURN, R. ST. J.—“Notes on two cases of epilepsy due to cysticercosis, with other suggestive cases.” LXV (2), 116-123. [1935.]

(135a) Of 258 suspicious cases examined at the Queen Alexandria Military Hospital 79 have been proved to be due to cysticercosis and 40 were regarded as doubtful. Eight new cases are recorded. Any patient previously healthy who develops fits or anomalous nervous or mental symptoms and who has lived abroad, should, in Dixon and Smithers' opinion, be suspected of cysticercosis until proved otherwise. Suspected cases should be re-examined at half-yearly or yearly intervals for subcutaneous nodules and calcified cysts in the soft parts. The prognosis is bad but a diagnosis removes the fear of heredity attached to epilepsy, prevents useless intracranial operation and insures a disability pension in the case of soldiers who have served abroad.

R.T.L.

136—Journal of the South African Veterinary Medical Association.

- a. MARÉ, G. S. & VILLIERS, O. T. DE—“The vermicidal effects of spineless cactus (*Opuntia* sp.).” VI (2), 121-127. [1935.]

(136a) Maré & Villiers have investigated the value of including cactus in the ration of sheep heavily infested with internal parasites. They found that cactus had no vermicidal effect and did not eliminate *Ostertagia*, *Trichostyngolus* or *Haemonchus contortus*. Its scouring effect, however, served mechanically to eliminate *Oesophagostomum columbianum*, owing to the occurrence of the latter in the posterior alimentary canal.

R.H.H.

137—Journal of the South-Eastern Agricultural College.

- a. JARY, S. G. & TRAVERS, S. J.—“‘Potato sickness’ on allotments at New Romney.” No. 36, pp. 100-102. [1935.]

(137a) Jary & Travers record the effects of drained creosote salts and farm yard manure on the yield of potatoes grown on “potato-sick” land, and discuss these results.

Farm yard manure was applied as an autumn dressing to all plots. Dressings of drained creosote salts at 6 and 10 cwt. per acre, with and without the addition of mixed artificial fertilizers, and further dressings of farm yard manure were applied in the spring. The greatest increase in yield was shown by the plots which received a second dressing of farm yard manure, slight increase was

shown to result from the application of drained creosote salts but this was not increased further by the addition of artificial fertilizers. Weather conditions unfavourable to the nematode, and the use of good "seed" are thought to have contributed to the general increase in yield as compared with the yield of the previous year.

M.J.T.

138—Journal of Tropical Medicine and Hygiene.

- a. CAWSTON, F. G.—"Artificial sources of schistosome infection and the cure of patients." *xxxviii* (9), 105-106. [1935.]
- b. CAWSTON, F. G.—"Dn. 7 in the treatment of bilharzia disease." *xxxviii* (12), 145-146. [1935.]
- c. CAWSTON, F. G.—"A consideration of the antimony content in drugs used for the destruction of schistosomes." *xxxviii* (14), 169-170. [1935.]
- d. EDITORIAL.—"The clinical aspect of Egyptian splenomegaly." *xxxviii* (14), 182-184. [1935.]

(138b) Dn 7, or Antimony bis oxyquinoleine sulphonate of diethylamine, in a total treatment of 4 grammes, the individual doses being given on alternate days, is superior to tartar emetic as in intravenous treatment for bilharziasis on account of its easy solubility and the absence of albumen or other undesirable effects.

R.T.L.

(138c) Cawston considers the antimony content, in both its trivalent and pentavalent forms, in drugs used for the destruction of schistosomes. He finds that the efficiency of the drugs is not dependent on the actual quantity of the metal, but on the potency of the form in which it is present. Considerable success has been obtained with the Dn derivatives, but further investigation is necessary to determine the relative value of these compounds, and whether all the parasites are eradicated by them. It is possible that their therapeutic value may be due in part to the nucleus of oxyquinoline in their structure.

K.S.

139—Journal of the Washington Academy of Sciences.

- a. CHITWOOD, B. G. & CHITWOOD, M. B.—"The histology of nemic esophagi. IV. The esophagus of *Metastrongylus elongatus*." *xxv* (5), 230-237. [1935.]
- b. JONES, M. F. & ALICATA, J. E.—"Development and morphology of the cestode, *Hymenolepis cantaniana*, in coleopteran and avian hosts." *xxv* (5), 237-247. [1935.]

(139a) Chitwood & Chitwood, in a fourth paper devoted to the histological study of the oesophagus in various groups of nematodes, here deal with the structure of that organ in *Metastrongylus elongatus*. Measurements of the 3 indistinct parts, viz., anterior corpus, isthmus and posterior bulbar region, are given and the distribution and character of the nuclei in each part are discussed in detail. The lumen of the oesophagus is triradiate throughout. The authors also give a histological description of the dorsal and subventral oesophageal glands.

J.N.O.

(139b) Jones & Alicata have elucidated the life-history of *Hymenolepis cantaniana* of poultry and describe the development and morphology of this cestode.

Specimens of the dung beetle, *Ataenius cognatus*, fed with eggs of the tape-worm and dissected at varying periods thereafter yielded early developmental

stages of proliferating larvae. Each larva developed into several lobes which elongated and formed a branched, mycelium-like structure. Buds arising along these branches developed either into new branches or into cysticercoids containing an unarmed scolex, the development of the cysticercoids resembling, in general, that of other *Hymenolepis* larvae. Scolex differentiation in *H. cantaniana* is partially, but not entirely, completed before invagination. From experiments the authors consider that 11 to 14 days is the minimum time required for the development of an infective larva in a beetle host while larval proliferation and development of new cysticercoids may continue for at least 4 weeks. The adult worm requires at least 14 days, but probably 2 to 3 weeks, for development in the chicken. Chickens, a quail and a guinea-fowl were all infested by feeding with larvae from naturally infested *A. cognatus*. Similar larvae were found in the beetles *A. stercorator* and *Choeridium histeroides* and they are reported as additional vectors. J.N.O.

140—Lancet.

- a. TUXFORD, A. S.—“Administration of carbon tetrachloride for hookworm.” [Correspondence.] CCXXVIII (5831), p. 1302. [1935.]
- b. LANE, C.—“Administration of carbon tetrachloride for hookworm.” [Correspondence.] CCXXVIII (5832), p. 1357. [1935.]

141—Lingnan Science Journal.

- a. LI, L. Y.—“A preliminary report on the occurrence of *Tylenchulus semi-penetrans* Cobb in the roots of citrus nursery plants of South China.” XIV (2), 331-333. [1935.]

(141a) Li gives a short account of observations on *Tylenchulus semi-penetrans* on various kinds of Citrus in the Chinese provinces round Canton. He found that the degree of root infestation bore no relation to leaf-mottling, die-back or general deterioration of trees since the parasite occurred as abundantly on the roots of trees having a normal healthy appearance as on those showing an unthrifty condition. He gives a list of 8 Citrus species or varieties on which the parasite was found. T.G.

142—Marseille Médical.

- a. ZWIRN, D., JOYEUX, C. & ABOUCAYA, A.—“*Ascaris lumbricoides* dans la cavité pleurale au cours d'une pleurésie purulente.” LXXII (16), 701-715. [1935.]
- b. BALDASSARI, M. T.—“Le parasitisme des rats à Toulon.” LXXII (16), 716-718. [1935.]

(142b) The helminths listed as parasites of rats in Toulon are *Hymenolepis fraterna*, *H. diminuta*, *Protospirura muris*, *Capillaria hepatica*, *Trichuris muris* and *Strongyloides ratti*. R.T.L.

143—Medicina de los Países Cálidos.

- a. KOURI, P., BASNUEVO, J. G. & BACARDI, J. F.—“Poder fasciolicida del clorhidrato de emetina.” VIII (3), 145-146. [1935.]
- b. SAMPEDRO, M. M.—“Un foco de necatoriasis importado, en Castañar de Ibor.” VIII (5), 217-232. [1935.]
- c. FERNÁNDEZ, F. & SALCEDO, R. D.—“Estudio parasitológico de cien casos de diarrea infantil.” VIII (7), 326-337. [1935.]
- d. SAMPEDRO, M. M.—“La lucha contra la anquilostomiasis en la Sociedad de Peñarroya. (1928-1932).” VIII (8), 361-384. [1935.]

(143a) Kouri and his co-workers claim to have cured a case of *Fasciola hepatica* in a woman, by giving emetine hydrochloride at the rate of 3.72 mgm. per Kg. body weight, which is well below the toxic limit. B.G.P.

144—Medizinische Welt.

a. SCHÖNMEHL, L.—“Wurmuren mit Chenopodiumöl.” IX (13), p. 453. [1935.]

(144a) Schönmehl reports favourably on the use of Chenopasan and Chenoposettes for ascariasis in man. These are proprietary products of oil of chenopodium, put up in capsules and sold together with a saline purgative, to simplify administration. Out of 58 test cases, 51 faeces were found to be free from ascarid eggs after one treatment, and the remaining seven were free after the second treatment. In each case the urine was examined before and after treatment; no harmful effects on the kidneys were observed. K.S.

145—Memorias do Instituto Oswaldo Cruz.

a. ALMEIDA, J. LINS DE—“Revisão do gênero *Haemonchus* Cobb, 1898. (Nematoda: Trichostrongylidae).” XXX (1), 57-114. [1935.]
b. AZEVEDO, A. P. DE—“Ascaridiose hepatica.” XXX (1), 115-122. [1935.]

(145a) After listing the 50 known genera of Trichostrongylidae Almeida gives a systematic account of 10 species of the genus *Haemonchus* viz., *contortus*, *longistipes*, *similis*, *lunatus*, *mitchelli*, *vegliai*, *bedfordi*, *bispinosus*, *cervinus* and *lawrencei*. Of these the last three are treated as species inquirendae. A useful bibliography concludes the memoir. R.T.L.

146—Mitteilungen für die Landwirtschaft.

a. GOFFART, H.—“Nematodenbekämpfung und Fruchtfolge.” L (23), 485-486. [1935.]

(146a) Goffart discusses the influence of the German Government's programme for increasing the cultivation of oleaginous, fibre-yielding and albuminous crops on the problem of suitable crop-rotations for checking important eelworm infestations and at the same time maintaining the fertility of the soil.

He shows that in districts where the beet strain of *Heterodera schachtii* is prevalent it will be disadvantageous to grow rape and turnip rape as, though good oleaginous crops, they are liable to attack from the parasite. On the other hand, their use can be recommended where the oat race of *H. schachtii* occurs since this does not readily attack them. Where the beet eelworm is abundant, beans and vetches should be grown as intermediate crops and, in districts in which suitable soil and climatic conditions obtain, lucerne can be strongly recommended as it is a valuable purifying crop. Lucerne and clover can also be recommended where the potato race of *H. schachtii* occurs as good results have accrued from their use even after one year's growth: The merits of other rotational crops are discussed where the stem eelworm, *Anguillulina dipsaci*, is implicated, and the dangers of including crops which can also serve as hosts of the parasite are pointed out. T.G.

147—Münchener Medizinische Wochenschrift.

- a. GRÜBER, G. B.—“Zur Frage der Wurmkrankheiten.” LXXXII (19), 733-735. [1935.]
- b. WITTMERS, F.—“Zur Frage der Wurmkrankheiten. Durchwanderung der gesunden Darmwand durch Askariden.” LXXXII (23), p. 923. [1935.]
- c. POSSELT, A.—“Zur Frage der Durchwanderung der gesunden Darmwand durch Askariden.” LXXXII (31), p. 1246. [1935.]

148—Mycologia.

- a. DRECHSLER, C.—“A new species of conidial Phycomycete preying on nematodes.” XXVII (2), 206-215. [1935.]

(148a) Drechsler describes the morphology and development of a new conidial Phycomycete, *Stylopage hadra* n. sp. which preys upon nematodes of such genera as *Rhabditis*, *Cephalobus*, *Diplogaster*, *Diploscapter*, *Acrobeles* and *Acroboloides*. Capture is effected by means of a yellow adhesive substance, similar to that secreted by other fungi destructive to *Amoebae*. Operating in conjunction with this material are large globose protuberances, which apparently develop after contact with the prey, and securely hold the worm by the extensive contact of their expanded surfaces. Frequently 2 or more protuberances participate in catching a nematode. After many hours, when the nematode is quiescent, its integument is perforated and from the adhesive protuberance is intruded an outgrowth that immediately gives rise to hyphae which ramify to permeate the interior of the worm and absorb the contents leaving, finally, the collapsed integument.

J.N.O.

149—Nature.

- a. CURRIE, G. A.—“Symbiotic association between flies and nematodes in galls of *Eucalyptus* trees.” CXXVI (3433), p. 263. [1935.]

(149a) Currie describes a symbiosis which appears to have arisen as an accidental association between Agromyzid flies, of the genus *Fergusonia* Malloch, and plant parasitic nematodes of the genus *Anguillulina*; the species is not mentioned.

Galling of the flower buds, notably of *Eucalyptus rostrata* and *E. hemiphloia* is caused by the flies. The nematodes live in the gall cavity in contact with the fly larvae and a number of fertilized females enter the body cavity of the female fly larvae. There eggs are laid and when the female fly in turn deposits its eggs in young flower buds a number of larval nematodes accompany them. The nematodes at once feed on the plant tissues and give rise to proliferating cells on which the fly larvae feed, making hollows in which they are associated with the worms.

J.N.O.

150—Nederlandsch-Indische Bladen voor Diergeneeskunde en Dierenteelt.

- a. KRIJGSMAN, B. J.—“Enkele voor Nederlandsch-Indië nieuwe parasitaire wormen.” XLVII (2), 106-107. [1935.]

(150a) Krijgsman's short check list of helminths parasitic in mammals and birds in the Dutch East Indies is supplementary to the extended list published in the same periodical in 1933 [see Helm. Abs., Vol. II, No. 272c].

B.G.P.

151—New Zealand Journal of Agriculture.

a. GILL, D. A.—“Control measures against worms in sheep.” LI (2), 101-106. [1935.]

(151a) Gill discusses, in a semi-technical manner, control measures against the roundworms infesting the abomasum and intestine of sheep. Having enumerated the commoner species, he stresses the need for very careful sheep-pasture management. From what is known of the life-histories of the parasites and especially of the times taken for larvae to reach the infective stage he recommends farmers to move sheep every week or ten days to fresh pastures, to drain or fence off swampy areas, to allow cattle to graze paddocks ahead of sheep, and lambs and hoggets ahead of older sheep. Treatment of sheep by anthelmintic medication is mentioned but the dosage of the drugs recommended is not stated.

J.N.O.

152—North American Veterinarian.

a. WRIGHT, W. H. & BOZICEVICH, J.—“Tests of anthelmintics for the removal of rabbit parasites.” XVI (7), 20-29. [1935.]

(152a) Wright & Bozicevich report on critical tests made with oil of chenopodium, tetrachlorethylene and carbon tetrachloride. They find that rabbits seem to tolerate large doses of these drugs, and that they effectively remove *Passalurus ambiguus* and *Obeliscoides cuniculi*, but that they have little action on *Trichostrongylus calcaratus* or *Trichuris leporis*. Attempts to remove excess mucus by dosing with a 2% solution of sodium bicarbonate were no more successful. The authors recommend the administration of drugs to rabbits, through a No. 12 Fr. Davol rubber catheter.

K.S.

153—Nuova Veterinaria.

a. SPENA, A.—“Un caso di intensa parassitosi da *Ascaris osculata* in una foca vitulina.” XIII (6), 17-19. [1935.]
 b. BARBIERI, G.—“Le alterazioni del midollo osseo nella distomatosi epatica delle pecore.” XIII (8), 1-5. [1935.]

(153a) [Heavy infection of *Ascaris osculata* in *Phoca vitulina*.]

(153b) Barbieri briefly describes histologically the bone-marrow of 10 sheep infected with liver-fluke.

B.G.P.

154—Okayama-Igakkai-Zasshi.

a. KAGAWA, S. & KUYAMA, S.—“Über ein Distomum aus dem Darm von *Megalobatrachus japonicus*.” XLVII (4), 1059-1062. [In Japanese : German summary pp. 1058-1059.] [1935.]
 b. UYENO, H.—“Über den Zucker-, Fettstoffwechsel und die passive Anaphylaxie bei experimenteller Kaninchenclonorchiasis sinensis. 2 Mitteilung. Experimentelle Untersuchung über den Fettstoffwechsel bei der Kaninchenclonorchiasis.” XLVII (4), 1095-1108. [In Japanese : German summary pp. 1094-1095.] [1935.]
 c. UYENO, H.—“Über den Zucker-, Fettstoffwechsel und die passive Anaphylaxie bei experimenteller Kaninchenclonorchiasis sinensis. 3 Mitteilung. Der Anaphylaxieversuch bei Kaninchenclonorchiasis.” XLVII (5), 1161-1172. [In Japanese : German summary pp. 1160-1161.] [1935.]

- d. WATANABE, M.—“Über die Embryonalentwicklung von *Paragonimus westermani*.” XLVII (5), 1173-1190. [In Japanese: German summary p. 1173.] [1935.]
- e. HASEGAWA, T.—“Über eine neue Art von Trematoden, *Exorchis major* n. sp., welches als Zwischenwirt *Plecoglossus altivelis* hat.” XLVII (5), 1192-1198. [In Japanese: German summary p. 1191.] [1935.]
- f. WATANABE, M.—“Über den Körperbau des Miracidiums von *Paragonimus westermani*.” XLVII (6), 1474-1479. [In Japanese: German summary p. 1473.] [1935.]
- g. HASEGAWA, T.—“Über ein oberflächliches Kennzeichen der Eier von Trematoden.” XLVII (6), 1544-1547. [In Japanese: German summary p. 1543.] [1935.]

(154a) Kagawa & Kuyama have re-described *Liolope copulans*, a trematode from the intestine of *Megalobatrachus japonicus*. They have amended Cohn's original description, particularly by establishing the presence of an oesophagus and by describing the main excretory ducts. B.G.P.

(154b) Uyeno extracted the livers of rabbits suffering from clonorchiasis and tested their action, when minced, on the hydrolysis of tributyrin. He found that at pH 8.043 and 38°C. hydrolysis was strongly inhibited. Moreover, the minced liver inhibited the normal hydrolytic action on tributyrin of an extract of ox-pancreas. The results pointed to faulty metabolism of fats by rabbits suffering from clonorchiasis. R.H.H.

(154c) Uyeno reports the development of anaphylactic changes in two rabbits experimentally infested with *Clonorchis sinensis*. Re-injection of antigen 24 hours after sensitization resulted in intoxication, a high blood pressure and an increase in the precipitin titre; the controls being unchanged. These changes occurred as well as the usual hepatic and circulatory disturbances. P.A.C.

(154g) There are peculiar lattice-like markings on the surface of the eggs of many species of trematodes. If this characteristic is ignored it is difficult to distinguish the eggs of *Clonorchis sinensis* from similar eggs. R.T.L.

155—Parasitology.

- a. TAYLOR, E. L.—“Do nematodes assist bacterial invasion of the host by wounding the wall of the intestinal tract?” XXVII (2), 145-151. [1935.]
- b. ROTHSCHILD, M.—“The trematode parasites of *Turritella communis* Lmk. from Plymouth and Naples.” XXVII (2), 152-170. [1935.]
- c. ROTHSCHILD, M.—“Note on the excretory system of *Cercaria ephemera* Lebour, 1907 (nec Nitzsch).” XXVII (2), 171-174. [1935.]
- d. SKINKER, M. S.—“A redescription of *Taenia tenuicollis* Rudolphi, 1819, and its larva, *Cysticercus talpae* Rudolphi, 1819.” XXVII (2), 175-185. [1935.]
- e. LAPAGE, G.—“The second ecdysis of infective nematode larvae.” XXVII (2), 186-206. [1935.]
- f. WOODLAND, W. N. F.—“Some more remarkable cestodes from Amazon siluroid fish.” XXVII (2), 207-225. [1935.]
- g. COLE, H. A.—“On some larval trematode parasites of the mussel (*Mytilus edulis*) and the cockle (*Cardium edule*).” XXVII (2), 276-280. [1935.]
- h. WOOLCOCK, V.—“Digenetic trematodes from some Australian fishes.” XXVII (3), 309-331. [1935.]
- i. THEILER, H., AUGUSTINE, D. L. & SPINK, W. W.—“On the persistence of eosinophilia, and on immune reactions in human trichinosis, several years after recovery.” XXVII (3), 345-354. [1935.]

j. SRIVASTAVA, H. D.—“New parasites of the genus *Orientophorus*, n. gen. (family Felloidostomidae) from an Indian fresh-water fish, *Clupea ilisha*.” XXVII (3), 374-382. [1935.]

k. MANTER, H. W.—“The structure and taxonomic position of *Megasolena estrix* Linton 1910 (Trematoda) with notes on related trematodes.” XXVII (3), 431-439. [1935.]

(155a) Using cultures of *Bacillus suispestifer* and the stomach worm *Graphidium strigosum* Taylor has failed to obtain any experimental evidence that the worms assist the bacteria in obtaining entry to rabbits and concludes “that injuries caused to the bowel wall by parasitic worms in general do not play any important part in bringing about bacterial infection from the lumen of the intestine.”

R.T.L.

(155b) Six cercariae *C. pythionike* n. sp., *C. herpsyllis* n. sp., *C. doricha* n. sp., *C. nicarete* n. sp., *C. ampelis* n. sp. and *C. ranzii* n. sp. are described in detail from *Turritella communis*. All the species are closely related to the hugetailed monostome cercaria *C. rhodometopa* Perez (1924). The search for metacercariae proved fruitless.

R.T.L.

(155c) *Cercaria ephemera* displays the typical “*Stenostoma*” type of excretory system.

R.T.L.

(155d) *Taenia tenuicollis* Rudolphi, 1819 and its larva *Cysticercus talpae* Rudolphi, 1819 are described from Canada. The adults were found in *Mustela vison*, the larvae in *Ondatra zibethica*. Skinker does not agree with Cameron's identification of *T. intermedia* and is of opinion that *T. brevicollis* should stand as a doubtful species rather than as a synonym of either *T. intermedia* or *T. tenuicollis*.

R.T.L.

(155e) The second ecdysis of trichostrongylid larvae under the influence of various chemical solutions, e.g., chlorine, NaOH, Milton, etc., are described and the significance of the experimental results are discussed. Lapage is of opinion that further investigations by biophysical methods may bring all the ecdyses of parasitic nematodes under experimental control and so make possible the artificial cultivation of the adult parasites, while by altering the permeability of the adult cuticle the action of anthelmintics may be rendered more effective.

R.T.L.

(155f) The eight species of Monticelliinae are all referred to *Monticella*. *Goezeella* and *Spatulifer* are regarded as superfluous. A new genus *Manaosia* is erected for *M. braçodemoça*. A number of new species of rare genera are described.

R.T.L.

(155g) Cole gives an account of *Cercaria tenuans* sp. inq., the cause of orange sickness of mussels in the Conway estuary in North Wales and describes a new *Bucephalus* *B. mytili* n. sp. from *Mytilus edulis* from the same area.

R.T.L.

(155h) Five new trematodes from Australian fishes are described by Woolcock, viz., *Helicometra tenuifolia* n. sp., *H. bassensis* n. sp., *Parahemiuirus australis* n. sp., *Probolitrema philippi* n. sp. and *P. antarcticus* n. sp. Two new genera are created, viz., *Dactylostomum* (Allocreadiidae) with *D. gracilis* n. sp., t. sp. and *Eriolepturus* (Hemiuiridae) with *E. tiegsi* n. sp., t. sp.

R.T.L.

(155i) Theiler and others present results of blood and skin reactions in 7 cases of trichinosis 4 to 9 years after infection.

They find that cases of long standing (over 7 years) may fail to give any demonstrable immunological response, but up to 7 years they have obtained positive results from precipitin and intradermal reactions. Eosinophilia in these cases varied from 2% to 7%. While the number of cases was too small to generalize from, they think it possible that the eosinophilia may persist as long as the antibodies.

P.A.C.

(155j) In *Orientophorus*, a new genus in the subfamily Felloidostominae, four species from *Clupea ilisha* are described as new, viz., *O. brevichrus* t. sp., *O. gangeticus*, *O. ilishii*, and *O. clupii*. The post-testicular position of the ovary is characteristic of the genus for the ovary lies in front of the testes in all genera except in *Bacciger* Nicoll, in which it is between the testes. R.T.L.

(155k) *Megasolena estrix* from the Bermuda chub *Kyphosus sectatrix* has been placed by Linton in the Allocreadiidae. It is related to the Paramphistomidae according to Manter who creates a new subfamily Megasoleninae in the family Opistholebetidae for *Megasolena*, *Hapladena* and provisionally *Maculifer*. R.T.L.

156—Philippine Journal of Science.

- a. AFRICA, C. M. & GARCIA, E. Y.—“The occurrence of *Bertiella* in man, monkey and dog in the Philippines.” LVI (1), 1-11. [1935.]
- b. TUBANGUI, M. A.—“Additional notes on Philippine Acanthocephala.” LVI (1), 13-17. [1935.]

(156b) *Polymorphus frontospinosus* n. sp. from *Nycticorax nycticorax* and *Mediorhynchus sipocotensis* n. sp. from *Penelopides manillae* are described by Tubangui. R.T.L.

157—Physiological Reviews.

- a. MCCOY, O. R.—“The physiology of the helminth parasites.” XV (2), 221-240. [1935.]

(157a) This is a useful summary of some of the work published up till 1934 on some aspects of the physiology of trematodes, cestodes and nematodes.

McCoy reviews work on the respiration and metabolism, nutrition, growth, reproduction and behaviour of these organisms and on their production of anti-enzymes, anti-coagulins, haemolysins, histolytic ferments and toxins. The parasitic stages of helminths have become adapted to low oxygen tensions by splitting glycogen into carbon dioxide and fatty acids, but their non-parasitic stages still require oxygen. The parasites feed on substances in their environment. Their anti-coagulins, haemolysins and histolytic ferments appear to help to prepare these for absorption. Blood-feeders use substances in the plasma rather than the red corpuscles. Free-living and non-parasitic stages show approximately the same intrinsic rates of growth in radically different environments. Seventy references are given.

G.L.

158—Plant Disease Reporter.

- a. ANON.—“The sugar-beet nematode, *Heterodera schachtii*, Schmidt, on oats in Canada.” xix (1), p. 9. [1935.]
- b. STEINER, G. & BUHRER, E. M.—“Observations on nematode diseases of plants.” xix (3), 24-25. [1935.]
- c. COURTNEY, W. D.—“Some observations on transfers of the bulb or stem nematode, *Anguillulina dipsaci*.” xix (3), 25-26. [1935.]
- d. HASTINGS, R. J.—“Miscellaneous notes on some nematode diseases of plants in British Columbia.” xix (3), 26-28. [1935.]
- e. GODFREY, G. H.—“Hitherto unreported hosts of the root-knot nematode.” xix (4), 29-31. [1935.]
- f. BARSS, H. P.—“Temporary vs. permanent adaptation of nematodes to new hosts.” xix (4), 31-32. [1935.]
- g. HASTINGS, R. J.—“*Anguillulina dipsaci* in imported *Galtonia candicans*.” xix (8), p. 136. [1935.]

(158b) Steiner & Buhrer present 6 short notes on plant-parasitic nematodes: (i) *Heterodera marionii* is recorded on two new hosts, *Chaetochloa viridis* and *Tribulus terrestris*. (ii) *Anguillulina dipsaci* is reported for the first time from *Tigridia aurea* and *T. pavonia speciosa*; for a second time on *Colchicum speciosum*, and on potatoes from Morocco. (iii) *Anguillulina pratensis* caused serious damage to potatoes in Virginia and Mississippi. It is recorded also for the following new hosts: *Cytisus monspessulanus*, *Sesbania* sp. and *Ulmus parvifolia*. (iv) *Anguillulina agrostis* is reported in seed of *Festuca* sp. and *Hordeum jubatum*. (v) *Aphelenchoides fragariae* is recorded for the first time in the U.S.A. on *dahlia* and *Heuchera sanguinea*, and (vi) *Neotylenchus abulbosus* was found on imported *Tritonia* sp. T.G.

(158c) Courtney reports on experiments designed to find plants suitable for crop rotations on land infested with the narcissus race of *Anguillulina dipsaci*.

When grown in iron containers filled with sterilized soil and inoculated with narcissus material the following showed slight stunting and swelling of the stem base, the parasite being present in all stages, *Phaseolus vulgaris*, *Pisum sativum* and *Spinacia oleracea*. No symptoms were shown by *Avena sativa* or *Vicia sativa*. In another experiment a strain of the parasite affecting *Phacelia heterophylla* was successfully transferred to *Trifolium pratense*. Courtney concludes that the narcissus and red clover strains are not strictly monophagous and suggests the desirability of determining whether plants are susceptible to attack before they are included as rotational crops. T.G.

(158d) Hastings reports on various plant-parasitic nematodes occurring on cultivated crops in British Columbia: (i) *Anguillulina dipsaci* occurred on the bulbous iris Hart Nibbrig grown on an experimental plot at Saanichton following narcissus and the conclusion is drawn that the narcissus nematodes had transferred to the iris. The parasites from iris were found capable of setting up lesions on seedlings of Bark's barley under conditions similar to those in which the narcissus nematodes produce such lesions from which it is concluded that the two populations are identical, (ii) *Anguillulina pratensis* was found in 1932 causing root decline in narcissus associated with the fungus *Cylindrocarpon radicicola*. On planting this field with strawberries in 1934 unthrifty patches appeared and the eelworm was of frequent occurrence in the roots of affected plants; (iii) *Aphelenchoides fragariae* is reported as a

common pest on outdoor chrysanthemums in South Vancouver Island. Percentage infection and degree of pathogenicity are recorded for 4 varieties. The parasite was found on the weeds *Senecio vulgaris* and *Trifolium repens* growing in the chrysanthemum plot. Report is also made on an attempt to transfer the chrysanthemum eelworm to strawberry plants. T.G.

(158e) Godfrey lists 47 plants as previously unrecorded hosts of the root-knot eelworm, *Heterodera marioni*, with indications of the severity of infestation. All except one of the hosts occurred as weeds in Hawaiian pineapple fields and their importance as reservoir hosts is commented on. The plant names are listed under the natural orders to which they belong and of these 20 are represented. T.G.

(158f) Barss discusses the question of transference of plant-parasitic nematodes to new host plants. He suggests that such transference may often be a temporary starvation phenomenon not leading to permanent establishment in the new host and thinks it is desirable, where at all possible, to make extended observations to establish whether transference to new hosts is successful and permanent. T.G.

(158g) Hastings reports the presence of diseased bulbs of *Galtonia candicans* (Cape or summer hyacinth) affected by *Anguillulina dipsaci* in a consignment of bulbs from Holland intercepted by the Plant Quarantine Office of Vancouver. Though not a new host record for the parasite, this is apparently the first time it has been reported from imported stocks of the bulb. T.G.

159—Policlinico (Sezione Pratica).

a. VENTURA, A.—“Voluminosa cisti di echinococco del Douglas.” XLII (12), 557-563. [1935.]

160—Proceedings of the Helminthological Society of Washington.

- a. SKINKER, M. S.—“Miscellaneous notes on cestodes.” II (2), p. 68. [1935.]
- b. PRICE, E. W.—“Description of some heterophyid trematodes of the sub-family Centrocestinae.” II (2), 70-73. [1935.]
- c. MACY, R. W.—“A new trematode, *Limatulum gastrooides* (Lecithodendriidae), from the little brown bat, *Myotis lucifugus*.” II (2), 74-75. [1935.]
- d. HARWOOD, P. D.—“*Maculifer chandleri*, n. sp. (Allocreadiidae), a trematode from *Telestes* catfish.” II (2), 75-76. [1935.]
- e. KRULL, W. H.—“A note on the life history of *Echinostoma coalitum* Barker and Beaver, 1915 (Trematoda : Echinostomatidae).” II (2), p. 76. [1935.]
- f. KRULL, W. H.—“*Glaphyrostomum mcintoshi*, n. sp. (Trematoda : Brachylaemidae), with notes on its life history.” II (2), p. 77. [1935.]
- g. HORSFALL, M. W.—“Observations on the life history of *Macravestibulum obtusicaudum* Mackin, 1930 (Trematoda : Pronocephalidae).” II (2), 78-79. [1935.]
- h. MCINTOSH, A.—“A progenetic metacercaria of a *Clinostomum* in a West Indian land snail.” II (2), 79-80. [1935.]
- i. MCINTOSH, A.—“New host records of parasites.” II (2), p. 80. [1935.]
- j. DIKMANS, G.—“Parasites of cattle in Costa Rica.” II (2), p. 83. [1935.]
- k. DIKMANS, G. & LUCKER, J. T.—“New records of nematode parasites from deer in the United States.” II (2), p. 83. [1935.]

1. DIKMANS, G.—“A note on the identity of *Cooperia punctata* Ransom, 1907, and *C. fieldingi* Baylis, 1928 (Nematoda: Trichostrongylidae).” II (2), p. 84. [1935.]
- m. DIKMANS, G.—“A note on *Protostrongylus stilesi* (Nematoda: Metastrengylidae) from the mountain sheep, *Ovis canadensis*, in Yellowstone National Park, Wyoming.” II (2), p. 84. [1935.]
- n. WEHR, E. E.—“A revised classification of the nematode super-family Filarioidea.” II (2), 84-88. [1935.]
- o. ANDREWS, J. S.—“A note on the morphology of the anterior ends of the infective larvae of some nematodes parasitic in the alimentary tract of sheep.” II (2), 88-90. [1935.]
- p. ANDREWS, J. S.—“A second report of the occurrence of *Trichostrongylus longispirularis* in cattle in the United States.” II (2), p. 90. [1935.]
- q. JONES, M. F.—“The cestode *Hymenolepis microps* (Hymenolepididae) in ruffed grouse (*Bonasa umbellus*).” II (2), p. 93. [1935.]
- r. CHITWOOD, B. G.—“Nematodes parasitic in, and associated with, Crustacea, and descriptions of some new species and a new variety.” II (2), 93-96. [1935.]
- s. THORNE, G.—“Notes on free-living and plant-parasitic nematodes, II.” II (2), 96-98. [1935.]
- t. CHRISTIE, J. R. & CROSSMAN, L.—“Water temperatures lethal to begonia, chrysanthemum and strawberry ‘strains’ of the nematode *Aphelenchoides fragariae* (Anguillulinidae).” II (2), 98-103. [1935.]
- u. STEINER, G.—“Opuscula miscellanea nematologica, II.” II (2), 104-110. [1935.]
- v. SHERMAN, G. W.—“The control of the root-knot nematode, *Heterodera marioni* (Cornu) (Anguillulinidae), on tuberoses by hot water and vapor heat.” II (2), p. 111. [1935.]

(160a) Three of these four notes concern *Diphyllobothrium latum* of which *D. laruei* is considered a synonym. *D. mansonioides* is synonymous with *D. mansoni*. The record of *D. latum*, reported by Skinker, in 1934, from Salt Lake City, should have been from Yellowstone Park, Wyoming. Meggitt's *Oochoristica osheroffi*, 1934, includes *O. americana* Meggitt 1934, not *O. americana* Harwood 1932. R.T.L.

(160b) Three species of *Ascocotyle* Looss are described including *A. tenuicollis* n. sp. from *Botaurus lentiginosus* in Texas. Price gives reason for thinking that *Metascocotyle* is synonymous with *Phagicola*. R.T.L.

(160c) *Echinostoma coalitum* completes its development to the encysted cercarial stage in *Pseudosuccinea columella*. *Helisoma trivolvis*, *Physa halei* and *Musculium partumeium* may serve as second intermediate hosts only. The flukes will attain maturity in rabbits. R.T.L.

(160g) *Cercaria infracaudata* Horsfall 1930 from *Goniobasis livescens* develops experimentally in the duodenum of freshwater turtles into *Macravestibulum obtusicaudum* Mackin 1930. R.T.L.

(160i) The new helminth hosts recorded are *Peromyscus g. gossypinus* for *Scaphiostomum pancreaticum* McIntosh 1934, and the crow, in Michigan, for *Collyriclum faba* (Bremser). R.T.L.

(160j) *Mecistocirrus digitatus* is reported for the New World for the first time. *Setaria labiato-papillosa* and *Moniezia benedeni* also occur in cattle in Costa Rica. R.T.L.

(160k) (i) *Gongylonema verrucosum* from the rumen of a deer, *Odocoileus virginianus*, from the Ocala National Forest, Florida. (ii) *Gongylonema pulchrum* from the oesophagus and tongue of deer, *Odocoileus virginianus*, in North Carolina.

R.T.L.

(160n) This new classification of the Filarioidea includes as new creations *Dipetalonematidae* and *Stephanofilaridae*; *Dicheilonematinae*, *Tetracheilonematinae*, *Dipetalonematinae* and *Dirofilarinae*.

R.T.L.

(160o) A key is given for the identification of the infective larvae of *Strongyloides papillosus*, *Cooperia* spp., *Trichostrongylus* spp., *Haemonchus contortus*, *Ostertagia circumcincta*, *Oesophagostomum columbianum*, *Chabertia ovina*, *Monodontus trigonocephalus* and *Nematodirus* spp. The anterior ends are illustrated.

R.T.L.

(160r) Chitwood briefly reviews what is at present known of the rôle of Crustacea as hosts or commensals of adult nematodes. He also describes 2 new species and a new variety. *Rhabditis ocypodis* n. sp., from an egg mass of *Ocypode albicans* from Beaufort, N.C., U.S.A., is similar to *R. obtusa* except in the shape of the female tail; *Toxocara pearsei*, n. sp., from the digestive tract of a Snapping Shrimp, *Synalpheus brooksi*, taken at Tortugas, Fla., U.S.A., differs from other species of the genus in the shape of the ventriculus and its spicules are intermediate in length between *T. cati* and *T. canis*; *Tripylum carcinicolum calkinsi* n. var., from the gills of *Gecarcinus lateralis* taken at Punta Congrejos, Puerto Rico, differs from the type form only in size and body proportions; *Monhyphista cambrai* n. comb. is redescribed.

J.N.O.

(160s) Thorne revises the classification of the super-family Dorylaimoidea Thorne, 1934, and notes the probable identity of *Nemonchus galeatus* Cobb, 1913 with *Hoplolaimus coronatus*. Ammonium thiocyanate at the rate of 400 lb. per acre applied to soil infected with *Heterodera schachtii* had no effect on the cyst contents. A new slide-ring material is described.

The superfamily Dorylaimoidea is made to comprise four families, (i) Dorylaimidae de Man 1876, including subfamily Dorylaiminae Filipjev, 1918, subfamily Tylencholaiminae Filipjev, 1934, Nygolaiminae new subfamily and Longidorinae new sub-family; (ii) Leptonchidae new family, including Leptonchinae and Campyedorinae two new subfamilies; (iii) Diphtherophoridae, new family, including subfamily Diphtherophorinae Micoletzky, 1922, and Trichodorinae new subfamily; (iv) Alaimidae Thorne, 1934.

M.J.T.

(160t) Christie & Crossman have investigated the thermal death-point of strains of *Aphelenchoides fragariae* obtained from strawberry (2 strains), begonia and chrysanthemum.

Tests were made on a large number of samples, each consisting of 50 specimens of eelworm, obtained from each source. These were placed in a little water at the bottom of a test tube which was floated on a water-bath maintained at a given temperature. A considerable range of temperatures was used and for each temperature various times of treatment were tried. The worms were then placed in dishes in a shallow layer of water and the numbers which survived were counted and removed for about 4 days. The detailed results are set out in 4 tables and a graph. An outstanding result of these tests is that the two strains from strawberry, one from Cape Cod and the other from North Carolina, reacted quite differently. Whereas the strain from Cape

Cod was killed at 115° F. after 10 to 15 minutes, that from North Carolina was much more resistant to heat and many survived 2 hours treatment at this temperature. The suggestion is made that this difference in reaction may be related to observed differences in type of disease and seasonal incidence in strawberry plants from these two districts. T.G.

(160u) Steiner describes *Aphelenchoides solani* n. sp. and *Cephalobus cubaensis* n. sp. found in lesions in Irish potatoes originating from Cuba; *Aphelenchoides huntii* n. sp. parasitic in tiger lily bulbs and fruits of tomatillo (*Physalis ixocarpa*); *Neocephalobus compsus* n. sp. and *Panagrolaimus heterocheilus* n. sp. from the bulbs of *Sternbergia lutea*.

It is noted that *Procephalobus* Steiner 1934 is a synonym for *Panagrolaimus* Fuchs 1930; that variability exists in certain structures in *Cephalobus symmetricus* (Thorne 1925); that although Chitwood designated *Parasitaphelenchus conjunctus* Fuchs 1930 as type species of the genus, *P. uncinatus* Fuchs 1929 is the type species. The diagnostic characters of the genus *Parasitaphelenchus* are given. M.J.T.

(160v) Sherman describes hot water and vapour heat treatments of tuberoses as a means of controlling *Heterodera marioni*. Hot water treatment of 110, 112° and 114° F. for one hour did not eradicate nematodes but 116° F. for one hour and 118° F. for half an hour gave complete control. Vapour heat at 124° F. for half an hour also gave complete control but some nematodes survived 122° F. vapour heat for half an hour. The plants survived all treatments without injury. M.J.T.

161—Proceedings of the Royal Society of Medicine.

a. TAYLOR, E. L.—“Some fallacies in the diagnosis of helminthic disease.” XXVIII (8), 1002-1004. [1935.]

(161a) In discussing methods employed in the diagnosis of helminthic disease, Taylor considers that the large concentration of eggs obtained by the flotation technique often gives a false impression of the extent of the infestation unless it is realized how prolific helminths are in egg production. Worm-counting, although a valuable guide, is also a method subject to fallacies owing to great variability in egg-output and in the consistency of the faeces while a diagnosis of helminthic disease based on the number of worms recovered at autopsy should be given with some reserve unless definite lesions of disease are found in association with the parasites. D.O.M.

162—Proceedings of the Society for Experimental Biology and Medicine.

- a. MU, J. W.—“Local skin reactivity in rabbits to an extract of *Ascaris lumbricoides*.” XXXII (7), 995-997. [1935.]
- b. KHAW, O. K.—“*In vitro* experiments on the viability and excystment of *Paragonimus cyst*.” XXXII (7), 1003-1005. [1935.]
- c. HU, C. H. & HOEPPLI, R. J. C.—“Route of migration of *Spirocerca sanguinolenta* in experimentally infected dogs.” XXXII (9), 1393-1394. [1935.]
- d. CHEU, S. H. & KHAW, O. K.—“Treatment of Dirofilariasis immitis with concentrated fouadin.” XXXII (9), 1394-1396. [1935.]
- e. LEE, C. U. & CHU, H. J.—“Simple technique for studying schistosome worms *in vitro*.” XXXII (9), 1397-1400. [1935.]

- f. LEE, C. U. & CHUNG, H. L.—“Action of various organic antimony compounds on *Schistosoma japonicum* *in vitro*.” XXXII (9), 1400-1403. [1935.]
- g. BEACH, T. D.—“Experimental propagation of *Strongyloides* in culture.” XXXII (9), 1484-1486. [1935.]
- h. HOBMAIER, M. & HOBMAIER, A.—“Intermediate hosts of *Aelurostrongylus abstrusus* of the cat.” XXXII (9), 1641-1647. [1935.]

(162a) Mu has given rabbits an intradermal injection of extract of *Ascaris lumbricoides* and has followed it up 24 hours later by an intravenous injection of the same extract. An intense skin reaction followed, sections of the skin showing a massive infiltration of polymorph leucocytes, endovascular necrosis, thrombosis and rupture of the blood vessels with haemorrhage. The control animals, the treatment of which is described, did not react with a haemorrhagic necrosis.

P.A.C.

(162b) *Paragonimus* cysts hatch in $1\frac{3}{4}$ hours in artificial intestinal juices plus 5% fresh cow's bile without previous contact with gastric juice and in 45 to 90 minutes in the same medium without the bile. In bile alone excystment occurred in 75 minutes in a 12% solution. The process of excystment differs from that of *Clonorchis sinensis* and *Opisthorchis felineus* only in the earlier escape of the larvae before the digestion of the outer cyst wall.

R.T.L.

(162c) After piercing the stomach wall the larvae of *Spirocerca sanguinolenta*, obtained from cysts in hedgehogs, migrate along the gastric and coeliac arteries to reach the upper abdominal and the lower thoracic aorta to attain finally their normal habitat in the upper thoracic aorta. The larvae cause marked necrosis, acute inflammation, haemorrhage and linear abscesses in the arterial walls which heal rapidly after the parasites have wandered further on. No larvae could be found in blood from the hepatic or pulmonary capillaries, but large numbers of live larvae were recovered from mashed lung and liver substance.

R.T.L.

(162d) When dogs, infected with *Dirofilaria immitis*, are brought under the toxic influence of concentrated Fouadin by daily intramuscular injections the blood microfilaria and the intrauterine embryos are killed although the adults survive. “Concentrated Fouadin” is 4 to 5 times more potent than “Fouadin.” Ten dogs were used in these studies. The largest single dose for dogs of 12 to 15.5 Kg. body weight was 1.5 c.c. and contrasted with 3 c.c. of Fouadin for those weighing 17.3 to 23.6 Kg. Moreover, with the smaller dose of Concentrated Fouadin, the duration of treatment was many times shorter than with Fouadin.

R.T.L.

(162e) By using small tissue culture flasks and human ascitic fluid or aseptic serum of horse, sheep or rabbit adult schistosomes were kept alive *in vitro* for as long as $2\frac{1}{2}$ months when the medium was replaced frequently.

R.T.L.

(162f) From *in vitro* studies on adult *Schistosoma japonicum* the prevalent belief that trivalent antimony compounds are more effective than pentavalent salts is confirmed. The authors' clinical experience indicates that tartar emetic results more readily in a permanent cure than Fouadin.

R.T.L.

(162g) On a culture medium composed of nutrient agar 2 gm., filtered aqueous extract of monkey faeces 25 c.c., distilled water 75 c.c., a known number of eggs of *Strongyloides simiae* were developed into adults and a second generation of adults followed. This is the first occasion on which continued propagation has been observed.

R.T.L.

(162h) The conception of the mouse as the intermediate host of *Aelurostrongylus abstrusus* in the cat which Baudet also failed recently to confirm is questioned. From material obtained in San Francisco positive results were obtained with three species of the molluscan genus *Helminthoglypta* viz., *H. californiensis*, *H. nickliniana* and *H. arrosa*. The most suitable genus proved to be *Epiphragmophora*. Third stage larvae were also raised in *Helix aspersa*, *Agriolimax agrestis* and *Agriolimax columbianus*. Details of the life history, which is similar to that of other *Synthetocaulinae*, are given. Mice fed with first stage larvae of the cat lungworm escaped infections. R.T.L.

163—Proceedings of the United States National Museum.

a. CHANDLER, A. C.—“Parasites of fishes in Galveston Bay.” LXXXIII (2977), 123-157. [1935.]

(163a) Chandler describes 10 adult and 15 larval helminths, of which 20 are new. He notes the scarcity of flukes and the abundance of Acanthocephala. Following is the list of the new forms:—

TREMATODA: *Rhipidocotyle transversale* n. sp., *Lecithochirium microstomum* n. sp. CESTODA: *Tentacularia lepida* n. sp., *Proteocephalus australis* n. sp., *P. elongatus* n. sp., *Glossocercus cyprinodontis*, new group and new species, *Cysticercoides menidia* n. sp. NEMATODA: *Contracaecum collieri* n. sp., *C. robustum* n. sp.; *Amphicaecum parvum* n. sp., *Rhaphidascaris anchoriellae* n. sp., *Porrocaecum trichiuri* n. sp., *P. secundum* n. sp., *Goezia minuta* n. sp., *Dichelyne fastigatus* n. sp., *D. diplocaecum* n. sp., *Agamoneema immanis* n. sp., *Agamoneema vomitor* n. sp. ACANTHOCEPHALA: *Atactorhynchus verecundus* n. g., n. sp., *Arhythmorhynchus duocinctus* n. sp. E.M.S.

164—Records of the Indian Museum.

a. PATWARDHAN, S. S.—“On a new oxyurid from a squirrel.” XXXVII (1), 11-13. [1935.]
 b. CHATTERJI, R. C.—“Nematodes from a common Indian lizard (*Uromastix hardwicki*) with remarks on *Kalicephalus parvus* Maplestone, 1932.” XXXVII (1), 29-36. [1935.]

(164a) Under the name *Latibuccana funambulensis* gen. et sp. nov. Patwardhan describes a new Cosmocercinae from the intestine of the squirrel *Funambulus pennanti pennanti* Wroughton, in India. The new genus is near to *Alaplectana* but has indistinct lips, a wide buccal cavity, the vulva is in front of the middle of the body and there are no pedunculated papillae. R.T.L.

(164b) Of four species of *Thelandros* described from *Uromastix hardwicki* 3 are new, viz., *T. taylori* n. sp., *T. baylisi* n. sp. and *T. kasauli* n. sp. R.T.L.

165—Recueil de Médecine Vétérinaire.

a. BUCK, LAMBERTON & RANDRIAMBELOMA.—“Localisation hépatique de *Cysticercus bovis* et de *Cysticercus cellulosae*.” VIII (2), p. 74. [1935.]

(165a) Having in mind the therapeutic use of raw ox liver, Buck and his collaborators report the presence of two *Cysticercus bovis* in the liver of a cow. There were no cysts in the other organs. *C. cellulosae* is less rare in pig's liver, but this is invariably eaten cooked. B.G.P.

166—Revista Medico-Cirurgica do Brazil.

a. FREITAS, J. F. TEIXEIRA DE & LENT, H.—“Sobre o macho de *Capillaria auritae* Trav., 1914, com uma nota a respeito da identidade dos generos *Capillaria* Zeder, 1800 e *Eucoleus* Duj., 1845.” *XLIII* (4), 109-111. [1935.]

(166a) Freitas & Lent give a redescription of *Capillaria auritae* Trav., 1914 in which they point out that the male spicules are transparent and difficult to make out. An examination of the males of *Capillaria gastrica* (Baylis, 1926) has revealed the presence of a spicule, a fact which supports Baylis' view that *Eucoleus* and *Capillaria* are identical. D.O.M.

167—Revue de Chirurgie.

a. COSTANTINI, H. & CURTILLET, E.—“Étude anatomo-clinique et thérapeutique des kystes hydatiques du poumon.” *Year 54*, No. 4, 297-328. [1935.]

168—Revue de Zoologie Agricole et Appliquée

a. DESHUSSES, J. & DESHUSSES, L. A.—“L'Anguillulose de l'hortensia.” *XXXIV* (3), 35-39. [1935.]

(168a) Deshusses & Deshusses describe a diseased condition of Hortensia (*Hydrangea Hortensia*) caused by *Anguillulina dipsaci*.

The chief symptoms are swellings on the shortened stems, blistering and discoloration of the leaves which become closely arranged on the stems and which easily become detached, and aborting of the flowers which remain small. The disease appears to have been imported from France and Belgium into Switzerland in affected stock. The authors discuss various methods of control but none of these has been carried to a successful conclusion. It is recommended that cuttings for propagation be taken only from healthy plants.

Varieties of Hortensia are listed in the order of their susceptibility to attack as follows:—“Goliath” and “de Vilbraye,” least susceptible; “Madame Mouillere,” “la Marne,” “le Cygne” and “Triomphe” susceptible; “Marechal Foch” and “Nidersachsen” most susceptible. T.G.

169—Schweizer Archiv für Tierheilkunde.

a. GRIEDER, H.—“Sektionen gefallener und wegen Krankheit entpelzter Farmfuchs sowie Kotuntersuchungen.” *LXXVII* (2), 81-93. [1935.]

(169a) Grieder deals with the cause and control of diseases encountered when breeding foxes. From the examination, during 1931-1933, of 389 foxes and 317 faecal samples the author concludes that the majority of deaths and diseases are due to lungworms and intestinal helminths. Ascariasis occurred frequently, especially in cubs and on one occasion more than 100 *Toxocara canis* were recovered from an arctic fox cub three weeks old. *Uncinaria stenocephala* was responsible for deaths from enteritis in cubs, in spite of anthelmintic treatment, although they did not become infested until 2-3 months of age. The lungworms *Crenosoma vulpis* and *Eucoleus aerophilus* also occurred in 6-18 months old animals causing emaciation, anaemia and finally death. *Capillaria plica*, although rare, caused cystitis. Statistics show that losses from endoparasitic diseases have greatly decreased due to strict execution of hygienic measures and anthelmintic medication. J.N.O.

170—Schweizerische Medizinische Wochenschrift.

- a. BONZANIGO, A.—“Zwei Fälle von Echinokokkenkrankheit im Kindesalter. (I. Mitteilung.)” LXV (22), 498-500. [1935.]
- b. INHELDER, H. E.—“Drei Askariden-Fälle.” LXV (26), 600-602. [1935.]

171—Semana Médica.

- a. IACAPRARO, G.—“Quiste hidático retrovesical en el hombre. Su estudio.” XLII (24), 1720-1736. [1935.]
- (171a) [Retrovesical hydatid in man.]

172—Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin.

- a. MÜLLER, F. R.—“Die Entwicklung des Fuchslungenwurmes *Crenosoma vulpis* (Dujardin 1845).” Year 1935 (1/3), 45-46. [1935.]

(172a) The common lungworm of foxes, *Crenosoma vulpis*, has been found by Müller to use the mollusc *Cepaea hortensis* as intermediate host. The larvae penetrate the foot of the mollusc and reach the infective stage after 16 days. Dogs experimentally fed with infected molluscs began to pass lungworm larvae on the 21st day after feeding. B.G.P.

173—South African Medical Journal.

- a. CAWSTON, F. G.—“The control of bilharzia infection in the Union.” IX (15), 519-520. [1935.]

174—Taiwan Igakkai Zasshi.

- a. MIYAMOTO, S. & UCHIDA, C.—“Über *Filaria immitis* bei Hunden in Formosa.” XXXIV (4), 448-451. [In Japanese: German summary p. 452.] [1935.]
- b. MAYEOZOKO, T.—“On the distribution of *Hymenolepis nana* in Taito Prefecture, south-eastern part of Formosa, and its mode of infection.” XXXIV (4), 459-470. [In Japanese: English summary p. 470.] [1935.]
- c. NARIHIRA, N. [NARIHARA, N.].—“On the definite host of *Raillietina madagascariensis* in Formosa.” XXXIV (7), 1000-1003. [In Japanese: English summary p. 1003.] [1935.]
- d. ABE, S.—“Supplement to an information in regard to organisation of *Microfilaria bancrofti*.” XXXIV (8), 1048-1057. [In Japanese: English summary p. 1058.] [1935.]

(174c) Narihira finds *Raillietina madagascariensis* widely distributed in rats in the city of Taihoku especially in *Rattus norvegicus*. Of water rats 54.26% were infected as contrasted with 8.62% in house rats. R.T.L.

(174d) The staining of dried films shows the inner structure of *Microfilaria bancrofti* to greater advantage than vital staining. The quantity of methyl-alcohol to Giemsa stain has considerable effect on staining. Manson's inner body is not specific for *M. bancrofti*. R.T.L.

175—Tierärztliche Rundschau.

- a. GRZIMEK, B.—“Die Wirkung von Nikotinsulfat auf Hühner.” **XLI** (20), 325-326. [1935.]
- b. MATOFF, K.—“Versuche zur Feststellung der Mindestzahl von Muskeltrichinen, welche zur Invadierung von Mäusen, Ratten, Meerschweinchen, Kaninchen und Hunden erforderlich ist.” **XLI** (29), 466-471. [1935.]

(175a) Using a 40% solution of nicotine sulphate as a vermifuge in hens Grzimek finds that a suitable dose is 0.25 gm. per kilo of body weight. Larger doses result in difficult respiration while death follows a dose of 0.775 gm. per kilo body weight.

P.A.C.

(175b) Matoff was able to infect 3 in 5 rats and 6 in 15 mice by feeding each with only 2 *trichinella* larvae, after previous starvation. This indicates approximately 100% infection, and also an even sex-ratio among the larvae, which were taken at random. If animals are not fasted the infection rate decreases considerably. Rats are more easily infected than guinea-pigs of the same weight, which require up to 40 larvae to ensure infection. Two puppies were infected with respectively 10 and 20 larvae.

B.G.P.

176—Tijdschrift voor Diergeneeskunde.

- a. TENHAEFF, C. & FERWERDA, S. F.—“Over de localisatie van de echinococose in de organen van de slachtdieren.” **LXII** (2), 76-94. [1935.]
- b. BURGGRAAF, H.—“Pancreas-distomatose.” **LXII** (8), 399-407; (9), 479-481. [1935.]
- c. BAUDET, E. A. R. F.—“Over de werking van causyth op trichinen bij ratten.” **LXII** (10), 527-532. [1935.]

(176a) Echinococcus cysts occur more frequently in the lungs than in the livers of ruminants, while the reverse is true in horses and pigs.

There is no definite knowledge with regard to the size of the liver capillaries and we have no reason to think that they are larger in ruminants than in horses and pigs. The hepatophile theory is also discarded and Tenhaeff & Ferwerda suggest that pulmonary infection occurs via the lymph vessels which are better developed in the intestinal wall of ruminants than in horses and pigs.

Double infection of lungs and liver increases in frequency with advancing age in ruminants. This is probably due to repeated infection. The authors think that more attention should be paid to the occurrence of such double infection and that there should be international uniformity in compiling meat inspection statistics in order to obtain more valuable data for the study of parasitic and infectious diseases.

H.M.

(176b) Burggraaf gives the results of further pathological studies on *Eurytrema pancreaticum* infestation in zebras and cattle. The former were more heavily infested and showed more marked lesions than the latter.

On the whole the lesions were similar to those previously described [see Helm. Abs., Vol. II, No. 290b] but 10% of zebras had severer lesions. In a case of “moderately heavy” infestation 1,250 parasites were counted. In severe cases the left lobe of the pancreas and peripheral portions of the right are mainly affected—these are the farthest away from the duodenum. They are shrunken, lighter in colour, with dark spots and stripes and firmer

in consistency. The parenchyma is largely replaced by connective tissue and fat. The ducts are enlarged, the walls are thickened and show proliferation—tumour formation was never seen—and they contain necrotic material in which lime is often deposited. Some ducts are cystic, in others the lumen is obliterated. Calculi are rare. The necrotic process in the ducts is apparently due to the activation of trypsinogen by inflammatory exudates or toxins of the parasites and is aided by stasis caused by the parasites in the small ducts. Necrosis of the parenchyma does not occur because the affected glandular tissue produces no trypsinogen. Regenerative processes occur in the glandular and endocrine tissue, sometimes with hyperplasia of the latter. In the second part the author describes the effect of the disease on the function of the pancreas. The digestive secretions are reduced and in severe cases may be entirely absent. The blood sugar showed an increase only in very severe cases, but the daily variations were in some cases greater than normal. Since the endocrine tissue is not affected as much as the other glandular tissue the disease does not lead to abnormally high blood sugar.

H.M.

(176c) Baudet found that the administration of causyth per os did not prevent the development of intestinal and muscular trichinosis in artificially infected rats, although treatment was started two days after infection. The favourable influence of causyth in a human case, reported by Weltmann in 1931, is considered to be due to an analgetic and antipyretic effect.

H.M.

177—Transactions (21st) American Game Conference.

- a. SWALES, W. E.—“Researches on liver fluke in deer.” pp. 406-411. [1935.]
- b. CAMERON, T. W. M.—“Animal parasites and wildlife.” pp. 412-417. [1935.]

(177a) *Fascioloides magna* in Canada develops in only two species of intermediaries viz., *Fossaria parva* and *Stagnicola palustris nuttalliana*. In the liver of 15 definitive hosts the pathological reactions differ somewhat. In the Cervidae the parasite is enclosed in capsules of fibrous tissue. In the larger Bovidae the tissue reaction is extensive and the bile ducts leading to and from the encapsulated worms are completely occluded, thus breaking the life cycle of the parasite. Powdered copper sulphate mixed with damp sand 1 to 5 broadcast in May at the rate of 250 lb. per acre proved entirely successful in eradicating the snail *Fossaria parva*. The other intermediary lives in an entirely different habitat and in this case the permanent and semi-permanent “Sloughs” are treated with the copper sulphate and sand mixture at the rate of 500 lb. per acre where the water has an average depth of 18 inches. The dangers of cutting hay from swampy areas unless it can be thoroughly dried before stacking is emphasized.

R.T.L.

178—Transactions of the American Microscopical Society.

- a. LEWIS, F. J.—“The trematode genus *Phyllodistomum* Braun.” LIV (2), 103-117. [1935.]
- b. KRULL, W. H.—“Some observations on the life history of *Brachylaemus virginiana* (Dickerson) Krull, N. 1934.” LIV (2), 118-134. [1935.]
- c. CABALLERO, E. & SOKOLOFF, D.—“A new trematode (*Schizamphistomoides tabascencis* [tabascensis] n. sp.) from the intestine of the fresh water turtle, *Dermatemys mawii* Gray.” LIV (2), 135-137. [1935.]

- d. DIKMANS, G.—“Two new lungworms, *Protostrongylus coburni* n. sp., and *Pneumostrongylus alpenae*, n. sp. from the deer, *Odocoileus virginianus*, in Michigan.” LIV (2), 138-144. [1935.]
- e. CHRISTENSON, R. O.—“Studies on the morphology of the common fox lungworm, *Capillaria aerophila* (Creplin, 1839).” LIV (2), 145-154. [1935.]
- f. SANDGROUND, J. H.—“*Spirura michiganensis* n. sp. and *Rictularia halli* n. sp., two new parasitic nematodes from *Eutamias striatus lysteri* (Richardson).” LIV (2), 155-166. [1935.]
- g. BYRD, E. E.—“Life history studies of *Reniferinae* (Trematoda, Digenea) parasitic in Reptilia of the New Orleans area.” LIV (3), 196-225. [1935.]
- h. HOLL, F. J. & ALLISON, L. N.—“A new trematode *Dasymetra nicolli* from a snake.” LIV (3), 226-228. [1935.]
- i. YOUNG, R. T.—“Some unsolved problems of cestode structure and development.” LIV (3), 229-239. [1935.]
- j. VAN GUNDY, C. O.—“*Hymenolepis anthocephalus*, a new tapeworm from the mole shrew, *Blarina brevicauda* Say.” LIV (3), 240-244. [1935.]

(178a) A key is given of all the species of *Phyllodistomum* which Lewis considers valid. He has re-examined Odhner's specimens of *Catoptroides spatula* and *C. spatulaeforme* and concludes that the genus *Catoptroides* is a synonym of *Phyllodistomum*.
R.T.L.

(178b) The life-history of *Brachylaemus virginiana* from the opossum has been traced in *Polygyra thyroides* in which the cercariae encyst. Slightly longer than 21 days is required.
R.T.L.

(178e) Christenson does not accept Chitwood's view that the oesophageal cells are derived from the anterior part of the intestine as a caecum without a lumen but considers that they are independent of the alimentary canal. Spicules are absent but there is a spinose spicular sheath with approximately 24 rows of spines in *Capillaria aerophila*.
R.T.L.

(178g) *Renifer aniarum* (Leidy) and *Dasymetra villica* n. sp. complete their development in *Physa helei*. Cercariae are produced within 30 to 40 days after the mollusc ingests the eggs. Details are given of the various stages.
R.T.L.

(178h) From *Natrix sipedon* Holl & Allison have described *Dasymetra nicolli* n. sp. which differs from *D. conferta* in having lobate testes and in the general shape of the body.
R.T.L.

(178i) Young summarizes our present knowledge of cestode cytology, organogenesis, etc. He points out many of the difficulties attached to this special study, and deplores the lack of general interest. Special topics discussed are the statolith of the proglottid, the interpretation of the germ layers, the evidence of a “germ track,” the occurrence of true amitosis, nuclear formation from chromidia, and oogenesis and spermatogenesis, particularly in regard to polar body formation on the one hand, and the homologies of cestode sperms with those of other metazoans on the other hand.
E.M.S.

(178j) *Hymenolepis anthocephalus* sp. nov. is common in the mole shrews of Douglas Lake, Michigan. The specific character is based on the exceedingly globular flower-like scolex.
R.T.L.

179—Transactions of the Highland and Agricultural Society of Scotland.

- a. NEWBIGIN, H. F. & WILSON, J. E.—“A survey of the prevalent diseases of poultry.” (Ser. 5), XLVII, 64-93. [1935.]

(179a) In a survey of diseases prevalent in poultry Newbigin & Wilson consider that *Syngamus trachea* is the only helminth which causes any considerable loss to poultrymen. *Heterakis gallinae*, *Ascaridia galli* and *Davainea proglottina* infestations are considered to cause only unthriftiness, diarrhoea and emaciation. They stress the fact that treatment is rarely economic but that preventive measures, some of which are discussed, are very important in the control of these diseases.

P.A.C.

180—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. LANE, C.—“Distribution of periodic *Microfilaria bancrofti* in the body of a man who died at 1.15 a.m.” [Demonstration.] XXIX (1), p. 4. [1935.]
- b. DRINKER, C. K., AUGUSTINE, D. L. & LEIGH, O. C.—“On filtration of microfilariae by lymph nodes.” XXIX (1), 51-58. [1935.]
- c. KNOTT, J.—“The periodicity of the microfilaria of *Wuchereria bancrofti*. Preliminary report of some injection experiments.” XXIX (1), 59-64. [1935.]
- d. MANSON-BAHR, P.—“A commentary on the diary kept by Sir Patrick Manson in China and now conserved at Manson House.” XXIX (1), 79-90. [1935.]
- e. LANE, C.—“A note on periodic bancroftian filariasis.” XXIX (2), 135-142. [1935.]

(180b) The embryos of *Dirofilaria immitis* have been experimentally perfused through the normal popliteal lymph nodes of dogs. Whereas bacteria and the dog's own red blood cells were phagocytosed in the nodes leaving the perfusate almost completely free, the microfilariae passed through with comparatively little hindrance and there was no phagocytic infiltration. The authors also show that the ensheathed microfilariae of *Loa loa* travel faster in the blood than do the non-sheathed microfilariae of *D. immitis*.

R.T.L.

(180c) The microfilariae of *Filaria bancrofti* are less active in day blood than in night blood and on this account are less able to work their way through the peripheral capillaries, hence the occurrence of nocturnal periodicity. In a human subject injected microfilariae lived 14 days and showed typical nocturnal periodicity. In another case, which showed clinical signs of filariasis, the injected microfilariae did not succeed in passing through the peripheral capillaries and so perished there. In an elephantiasis case the injected microfilariae only lived $2\frac{1}{2}$ days.

R.T.L.

(180e) Clayton Lane critically reviews the biological papers on *Filaria bancrofti* which have appeared in the Transactions of the Royal Society of Tropical Medicine and Hygiene during the past three years under the headings (i) optimum habitat of the adult worms, (ii) the carriage of the microfilariae by the blood or lymph (iii) reactions of microfilariae and lymph glands to one another, and (iv) periodicity.

R.T.L.

181—Tropical Agriculture.

- a. T. W. M. C.—“Nematodes and agriculture.” XII (5), 109-110. [1935.]
- b. PARRELL, I. W.—“On the control of the free-living larvae of bursate nematodes of domestic animals.” XII (5), 111-113. [1935.]

(181a) T.W.M.C. gives a popular account of the economic importance of the class Nematoda. The prevalence and importance of forms parasitic

upon both plant and animal hosts is noted, and the tendencies of modern agricultural practice to increase the incidence of, and consequent economic losses due to nematode parasites are stressed. Possible means of controlling nematode parasites of stock and the control of certain insect pests by means of nematode parasites are briefly dealt with.

M.J.T.

(181b) For sterilizing manure against the larvae of bursate nematodes, Parnell finds that urine and urea are the most efficient and that the lethal action of artificial fertilizers decreases too rapidly in the presence of faeces to be effective. Various chemicals have been tried to control infection on pastures but, so far, none of these have proved practicable. The author suggests that urea and calurea might be used for sterilizing human faeces.

D.O.M.

182—Verhandlungen der Naturforschenden Gesellschaft in Basel.

a. KREIS, H. A.—“Beiträge zur Kenntnis parasitischer Nematoden. I. Ein neuer parasitischer Nematode aus der Hirschziegenantilope, *Antilope cervicapra* L. : *Trichuris cervicaprae*, n. sp. (Trichurinae Ransom 1911; Trichuridae Railliet 1915; Trichuroidea Railliet 1916).” *XLVI*, 59-65. [1935.]

(182a) Kreis describes *Trichuris cervicaprae* n. sp. from the caecum of *Antilope cervicapra* from the Zoological Gardens in Basel. The characteristic feature of the species is found in the spicule. It terminates in a sharp point at the end of which is a minute pore, serving for the discharge of the sperm. Proximally, however, it widens rapidly to become beaker shaped. The walls of this crater are formed of 4 bands, 2 being lateral and the others dorsal and ventral, which pass forward to unite with the sheath of the spicule. All other features are typical for the genus.

P.A.C.

183—Veterinary Journal.

a. THWAITE, J. W.—“A case of gastro-enteritis in a ram.” *XCI* (6), p. 281. [1935.]

184—Veterinary Record.

a. TAYLOR, E. L.—“The treatment of gapes in chickens by mechanical removal of the parasitic worms.” *XV* (24), 692-693. [1935.]
 b. TAYLOR, E. L.—“The association between gastro-intestinal helminths and disease in ruminants.” *XV* (32), 915-919. [1935.]
 c. McCUNN, J.—“Husk in adult cattle.” [Correspondence.] *XV* (32), p. 940. [1935.]
 d. SAINT, F. E. T.—“Tape-worm vomition by dogs; an enquiry.” *XV* (33), p. 957. [1935.]
 e. ROBERTS, G. J.—“Husk in adult cattle.” [Correspondence.] *XV* (33), p. 970. [1935.]
 f. WOOD, W. A.—“Notes on the commoner helminth parasites of the respiratory and alimentary tracts of the domestic ruminants.” *XV* (36), 1081-1094. [1935.]
 g. DALLING, T.—“Some diseases of poultry.” *XV* (36), 1095-1098. [1935.]

(184a) Taylor has invented a simple instrument which is very effective in removing gapeworms from chickens.

It consists of a wire corkscrew $\frac{1}{2}$ inch in diameter, the distance between the coils of the spiral gradually increasing towards the tip. The modus operandi is to press on the trachea and insert the instrument when the glottis opens.

It is passed down the trachea with a screwing action slowly until the fork is reached and then withdrawn, still continuing the rotary action. The worms are caught up in the coils of the spiral and can easily be removed in a quick flow of water. The whole operation can be carried out in 30 seconds with complete success—45 pairs of worms having been removed at a time. The chicks suffer no injury or discomfort after the operation.

P.A.C.

(184b) Taylor deals with the clinical associations of helminth parasites in English domesticated animals. He is of opinion that there is no essential connection between *Moniezia* infection and disease in lambs. *Bunostomum trigonocephalum*, *Cooperia* spp. and *Trichuris ovis* although widespread in sheep rarely occur in large numbers and do not appear to cause disease.

Of the large number of species of Trichostrongyles found in English stock *Haemonchus contortus* and *Ostertagia* spp. are particularly pathogenic, especially *O. circumcincta* in sheep and *O. ostertagia* in cattle. *Nematodirus* may occur, even in large numbers, without any symptoms. The manner in which these worms cause disease and the important restorative action of iron therapy are emphasized. The various factors which determine the seasonal onset of disease and the association of parasitic gastritis with the improvement of pasture by basic slag are discussed. Taylor believes that prevention must still be regarded as the only effective method of dealing with most worm diseases of ruminants.

R.T.L.

(184c) McCunn reports two fatal outbreaks of parasitic broncho-pneumonia in adult dairy cattle. During the past two years "husk" has been widespread in England.

R.T.L.

185—Wiener Klinische Wochenschrift.

a. VALKÁNYI, R.—"Cholecystitis vortäuschender Echinokokkus." XLVIII (19), 592-594. [1935.]

186—Zeitschrift für Fleisch- und Milchhygiene.

a. KELLER, H.—"Dürfen Kopf, Herz, Zwerchfell und Schlund schwachfinniger Rinder abgekocht dem Metzger zur Wurstfabrikation als vollwertig freigegeben werden?" XLV (8), 146-147. [1935.]

b. KELLER, H.—"Über die Messung der Innentemperatur finniger Fleischviertel bei dem neuen Gefrierverfahren." XLV (17), 321-322. [1935.]

(186a) German Government regulations allow meat only slightly infested with cysticerci to be offered for sale, without restriction, provided the carcass has been salted or chilled so as to kill the cysticerci. Keller points out that head, heart, diaphragm and gullet will not withstand chilling, but that these organs (and also the lungs) might be rendered safe if cut out and either steamed or boiled. He recommends a revision of the regulations in this sense.

B.G.P.

(186b) In freezing cysticercous meat by the new rapid process, which aims at maintaining the meat at -3°C . for 24 hours, it is not sufficient to control the temperature of the refrigerator. Keller points out that, the more fat in a given carcass, the longer it will take to cool to -3°C . in the interior. Hence it is essential to read the temperature within the carcass. Keller describes the use of a pointed steel tube which is driven into the meat and which protects the glass, stem-graduated thermometer.

B.G.P.

187—Zeitschrift für Parasitenkunde.

- a. HSÜ, H. F.—“A study of some Strongyoidea and Spiruroidea from French Indo-China and of *Thelazia chungkingensis* Hsü, 1933 from China.” VII (5), 579-600. [1935.]
- b. AZIM, M. A.—“Entwicklungsgeschichte von *Apharyngostrigea ibis* n. sp. und seine Entwicklung aus *Cercaria apharyngostrigea ibis* n. sp. in dem Reiher *Ardeola ibis ibis*.” VII (5), 608-614. [1935.]
- c. SASSUCHIN, D. N., TIFLOW, W. E. & SCHULZ, R. S.—“Endo- und Ektoparasiten der Sandmaus. *Rhombomys opimus* Licht. 3. Mitteilung.” VII (5), 635-638. [1935.]

(187a) Among the 5 species of Strongyoidea and 9 of Spiruroidea described by Hsü is one new genus *Pulmostrongylus* t. sp. *P. fengi* n. sp. from the mongoose *Herpestes urva* and 5 new species, viz., *Oswaldocruzia hoeplii* from a toad, *Dictyocaulus khawi* from the pig, *Thelazia chui* from a falcon, *T. tonkinensis* from a crow and *Rictularia houdemeri* from *Viverra zibetha*.

R.T.L.

(187c) Sassuchin, Tiflow and Schulz list the intestinal parasites, haematozoa and ectoparasites of *Rhombomys opimus*, a serious pest and plague-carrier in south-eastern Russia. The helminths comprise *Aspiculuris asiatica*, *Dentostomella translucida*, *Syphacia obvelata*, *Trichocephalus rhombomidis*, *Gongylonema neoplasticum*, *Physaloptera massino*, *Litomosa vitei*, *Hydatigera krepkogorskoi*, *Catenotaenia rhombomidis*, *Hymenolepis ognevi* and *Moniliformis moniliformis*.

J.N.O.

188—Zentralblatt für Bakteriologie. Abteilung I. Originale.

- a. TRAWIŃSKI, A.—“Studien über Immunität bei Trichinose.” CXXXIV (3/4), 145-149. [1935.]
- b. SCHMID, F.—“Beitrag zur Technik der helminthologischen Untersuchung.” CXXXIV (3/4), 150-151. [1935.]
- c. LENTZE, F. A.—“Zur Biologie des *Oxyuris vermicularis*.” CXXXV (1/3), 156-159. [1935.]

(188a) Trawiński has produced, from rabbits infected with Trichinella, a serum with antitoxic (not antiparasitic) properties. A dose of 200 larvae given to unprotected rats is normally fatal between the 10th and 15th days after feeding. If rats were given three subcutaneous injections of 1 c.cm. of serum, obtained from heavily infected rabbits between the 25th and 35th day after infection, then they withstood three or more times the lethal dose.

B.G.P.

(188b) A useful method of concentrating minute nematodes such as trichostrongyles from intestinal contents, Schmid finds, is to stir the contents with a wire or thin wooden stick around which the worms become wound. In the presence of much mucus 1% soda solution should be added. If the stick is now agitated in normal saline the worms will be freed.

B.G.P.

(188c) Lentze suggests that re-infestation with *Oxyuris vermicularis* can occur via the nasal passage. The eggs are small enough to pass through any material except that of the finest mesh and are sufficiently light for some to be transferred short distances through the air when the bed linen is agitated. If such eggs are inhaled, they may easily pass to the gut and set up infection. He disposes of the theory that hatching and development of larvae can occur within the intestine.

P.A.C.

189—Zoologischer Anzeiger.

- a. WEHR, E. E. & DIKMAN, G.—“ New nematodes (Filariidae) from North American ruminants.” CX (7/8), 202-208. [1935.]
- b. HEINZE, K.—“ Über Gordiiden. (Species Inquirendae und Neubeschreibungen.)” CXI (1/2), 23-32. [1935.]
- c. RIETSCHEL, P. E.—“ Zur Bewegungsphysiologie der Cestoden.” CXI (3/4), 109-111. [1935.]
- d. SCHULZ, E.—“ Die Orientierung des Nematodenkörpers und die halb-sessile Lebensweise der frei lebenden Nematoden.” CXI (5/6), 123-131. [1935.]
- e. GOFFART, H.—“ Bemerkung zu meinem Aufsatz : *Rhabditis gracilis* n. sp. (Rhabditidae, Nematoda) als Bewohner faulender Kakaofrüchte.” CXI (7/8), p. 223. [1935.]

(189a) Wehr & Dikmans record *Elaeophora schneideri* n. sp. from the carotid artery, posterior aorta and mesenteric arteries of two sheep in New Mexico and from a deer in Utah, and *Onchocerca cervipedis* n. sp. from the subcutaneous tissues of deer in Montana and British Columbia. *E. schneideri* had previously been reported as *Macdonaldius* sp. by Dikmans (1934).

R.T.L.

(189b) Heinze has re-examined part of the type material of various Gordiids in the Berlin and Hamburg Museums, especially those specimens designated by earlier authors, particularly Camerano, as “ Species Inquirendae ” because of insufficient descriptions. The author comes to the following conclusions : *Chordodes variopapillatus* Römer, 1895 is a poorly preserved *Gordius* sp. ; *C. liguligerus* Römer, 1895 and *C. hamatus* Römer, 1895 are both Mermithids ; *C. bouvieri* Villot (Römer) is *C. modiglianii* Cam. *C. pilosus* Möbius, 1855 and *Gordionus violaceus* (Baird, 1853) are redescribed from type preparations. Of the two female specimens labelled as *Paragordius flavescens* Linstow, 1906, one corresponds with von Linstow's description, while the other is so markedly different that it is redescribed, by the author, as *P. diverselobatus* n. sp. The single male specimen of *Chordodes echinatus* is placed in *Chordodiolus* n. g., which is defined, and redescribed as *Chordodiolus echinatus* (v. Linstow), principally on account of the characteristic posterior end with a terminal cloaca, the small size and the areolar type.

J.N.O.

(189c) Living specimens of *Catenotaenia pusilla* showed, in Ringer's solution, waves of contraction passing from the scolex backwards, each wave including 2 to 5 proglottids at the anterior end and $\frac{1}{2}$ to $\frac{1}{4}$ of one of the longer posterior proglottids. The speed of the waves varied with the temperature of the medium. The author concludes that the impulse exciting the waves of contraction does not depend on the scolex, nor does the nervous system transmit it, nor is it hydrostatically transmitted by the excretory canals ; it is mechanically propagated by the pull of contracting muscle fibres on the muscle fibres immediately behind them. The waves of contraction probably help the worm to move forward in strong currents of chyme ; in weaker currents of chyme they may also assist its nutrition by passing chyme over the proglottids.

G.L.

(189d) Schulz discusses the so-called semi-sessile mode of life of marine free-living nematodes.

The views of Steiner on the manner in which the semi-sessile habit may have arisen are criticised in detail. The author contests Steiner's views and concludes that marine free-living nematodes are not semi-sessile in mode of life, but are, in contradistinction, haptic. He follows Romane's definition of a semi-sessile animal as one which by means of its organs of attachment is confined for some time to one position for purposes of feeding but which can move to other sites at will. Haptic organisms, on the other hand, normally lead a wandering life but attach themselves to some support on being harassed or disturbed. These conclusions are supported by a wealth of critical discussion.

T.G.

(189e) Goffart finds the name *Rhabditis gracilis*, under which he described a new nematode obtained from decaying cacao fruits from the Cameroons, preoccupied and here proposes the name *R. graciliformis* for his species [see Helm. Abs., Vol. IV, No. 77a].

J.N.O.

NON-PERIODICAL LITERATURE.

190—ANON.—“L'Aguillulose des racines *Heterodera radicicola* Greef. (Nématodes, Anguillulinidés).” Memento, Direction Générale de l'Agriculture, du Commerce et de la Colonisation Service de la Défense des Végétaux. Rabat. No. 29, 13 pp. [1935.]

(190) An unsigned general account of *Heterodera radicicola* is given. The geographical distribution, life cycle and morphology of the parasite are described, together with the symptoms of infestation shown by the plants. Plants susceptible to attack are listed and control measures, including rotation with immune and resistant crops and soil sterilization by steam and chemical treatments, are discussed.

M.J.T.